CURRICULUM VITAE ET STUDIORUM

Prof. Vito Di Noto

Present Positions: -*Full Professor of Electrochemistry for Energy and Solid-State Chemistry* in the Department of Industrial Engineering of the University of Padova, Italy.
-*Head of the Section of Chemistry for Technology* in the same Department; he is the founder and the team leader of the research group "Chemistry of Materials for the Metamorphosis and the Storage of Energy – CheMaMSE".
- *Fellow of the Electrochemical society.*
- *Japan Society for the Promotion of Science Fellow.*
- *President of the Division of Electrochemisty of the Italian Chemical Society.*

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EDUCATION

B.S./M.S. Chemistry (full marks), University of Padova, Academic Year 1985/1986;
Ph.D. Chemistry, University of Padova, 1992.

NATIONAL FULL PROFESSOR HABILITATIONS

18/12/2013 - Industrial Chemistry (03/C2);
23/12/2013 - Inorganic Chemistry (Fundamentals of Chemical Sciences; 03/B1);
29/01/2014 - Physical Chemistry (Models and Methods for Chemical Sciences; 03/A2);
17/02/2014 - Chemistry for Technologies (03/B2).

PROFESSIONAL EXPERIENCE

2015- Full Professor of Solid State Chemistry and Chemistry for Energy at the Department of Industrial Engineering of the University of Padova, Italy;

2002-2015 Professor of Solid State Chemistry and Chemistry for Energy at the Department of Chemical Sciences of the University of Padova, Italy;

1992-2002 Researcher at the Department of Inorganic, Metallorganic and Analytical Chemistry of the University of Padova, Italy.

SCIENTIFIC PRODUCTION

a) 311 published papers: 261 are peer-reviewed papers (ISI+SCOPUS), 10 are book chapters, 30 patents (13 international and 17 national, 13 were sold) and 10 are papers on proceedings.
b) The meeting contributions are 296, of which:
   i. 199 are oral presentations in international symposia, among which 83 are invited: 60 invited, 16 Keynotes and 8 Plenary Lectures;
   ii. 24 are oral presentations in national meetings, of which 4 are invited.
c) 24 sono presentazioni orali a convegni nazionali, di cui 4 ad invito.

d) ***c) h-index = 48 (Google Scholar), more than 7720 citations (July 2021). h-index = 45 (Scopus), more than of 6220 citations (July 2021). h-index = 43 (ISI), more than 6000 citations (July 2021).***

RESEARCH ACTIVITY

The main achievements of the research activity carried out by Prof. Di Noto are summarized in the following five main topics:

Topic I *- Electrolyte and electrode materials for fuel cells of the type PEMFCs (Polymer Electrolyte Membrane Fuel Cells), AEMFCs (Anion Exchange Membrane Fuel Cells), HT-PEMFCs (High-Temperature Proton Exchange Membrane Fuel Cells), DAFCs (Direct Alcohol Fuel Cells), and for PEM electolyzers (since 1999);*

The aim of this research was focused on the synthesis and the study of:

a) proton-conducting and anion-conducting ionomers, both conventional and hybrid inorganic-organic, mainly based on Nafion, for application in PEMFCs;

b) electrocatalysts (ECs) based on transition metals supported on carbon-nitride conductive matrices (CN) and electrode configurations for the fabrication of membrane-electrode assemblies (MEAs). These materials were developed for application in PEM electrolysers and low-temperature PEMFCs.

These activities led to the development of:

a) new hybrid inorganic-organic Nafion-based electrolytes, characterized by an excellent performance in single PEMFC;

b) new mono/plurimetallic carbon nitride-based electrocatalysts of the “core-shell” type based on PGM and Non-PGM, characterized by a high Oxygen Reduction Reaction (ORR) performance and durability in fuel cells;

c) new membranes and electrocatalysts for passive direct methanol fuel cells with a high efficiency.

Most relevant results of topic I

- *Electrocatalysts for Oxygen Reduction Reactions (ORR):*

1. Device and preparation for the first time of new ORR ECs with a “core-shell” morphology consisting of a conducting “core” and a “shell” of a carbon-nitride matrix supporting Pt and Pd active sites. These systems, @ 0.9V vs RHE, show an “ex-situ” specific surface activity for Pt and Pd based ECs, which is up to ca. 13 and 1.6 times higher than that of Pt/C ref., respectively. These materials, when tested in single fuel cells under operating conditions, required 0.045 and 0.45g of Pt and Pd, respectively, to deliver 1kW of Power.
2. The effect of different parameters, such as precursors used in the synthesis, composition of pre-catalysts, and pyrolysis processes, were elucidated.

3. The interplay between the composition, oxidation states of metal active sites in alloy nanoparticles (NPs), structure and electrochemical performance was clarified. It was demonstrated, for the first time, that the best ECs of this class consist of a "shell" of carbon-nitride matrix (CN) which presents: a N concentration lower than 5wt% with N located exclusively in metal coordination "nests"; active sites on metal alloy NPs which are well exposed to reagents (good accessibility of reagents to sites).

- ✓ *Proton and Anionic Exchange Membranes*
  - ✓ *Proton Exchange Membranes (PEMs)*

1. New hybrid inorganic-organic membranes based on Nafion and suitable "core-shell" inorganic nanofillers were obtained. These membranes present: (i) an improved conductivity at high temperatures (up to 7.0×10^{-2} S cm^{-1} at 115 °C; in the same conditions, pristine Nafion has a conductivity of 3.3×10^{-2} S cm^{-1}); and (ii) an interesting implementation in single fuel cells running at low hydration degrees.

2. The interplay between the structure, thermo-mechanical transitions and electric response of membranes was fully clarified. These studies permitted to propose an unitary model which allowed to reconcile the structural features and the nano-morphological reorganizations of host polymer domains with the phenomena responsible of thermo-mechanical and electrical relaxations. Thus, for the first time, a crucial basic background is provided for designing new materials and for understanding the conductivity mechanisms of ionomers.

  - ✓ *Anion Exchange Membranes (AEM)*

1. The interactions and the thermo-mechanical and electrical relaxations characterizing the structure and the properties of these materials were elucidated.
2. In these materials, for the first time, a new solid-state transition, indicated as $T\delta$, was detected. $T\delta$ is the temperature of the AEM at which a disorder-order transition occurs. It modulates the electrical and mechanical properties of membranes.
3. A totally new family of AEMs were developed, based on polyketone backbones.

Topic II *- Polymer electrolytes and innovative electrode materials for the reversible storage of electrical energy in secondary lithium and magnesium batteries (since 1992).*

The research activity in this area was focused on the preparation and the study of:

a) hybrid inorganic-organic Li- and Mg-based electrolytes for batteries and sensors; new classes of materials and synthetic approaches were proposed;

b) electrode materials for the development of rechargeable magnesium batteries;

c) hybrid inorganic-organic electrolytes with a transport number close to 1 for lithium batteries (Lithium Single-Ion Conducting Materials);

d) All-solid-state electrolytes based on fluorinated titanium oxide and molten lithium.

e) electrolytes based on ionic liquids doped with inorganic NPs which are neutralized on the surface with lithium ions;

f) 3D-concatenated electrolytes through halide bridges based on δ-$MgCl_2$ and ionic liquids for reversible magnesium batteries.

Most relevant results of topic II

- ✓ The development of the first prototypes of operating secondary magnesium batteries;
- ✓ the development of the first synthesis protocol for preparation of hybrid ion-conducting inorganic-organic materials of the Z-IOPE family (Z-IOPE: Zeolitic Inorganic Organic Polymer Electrolytes) by a sol→gel→plastic reaction starting from precursors consisting of transition metal complexes instead of metal alkoxides;
- ✓ the preparation of the first ceramic nano-fillers, which consist of inorganic anionic nanoparticles (macroanions) neutralized on the surface with lithium cations, to use in the preparation of electrolytes. These electrolytes, which showed a unity transference number, are characterized by a high lithium ion conductivity and are very stable when contacted directly with solid metallic lithium at the anode of the batteries;
- ✓ the preparation of magnesium electrolytes characterized by large exchange currents and high reversibility at the magnesium metallic anode.

Topic III *- Study of the electric response of ion-conducting, electric and dielectric materials by broadband electrical spectroscopy (BES) (since 1994).*

BES studies allowed to define the phenomena underlying the electrical response of ion-conducting, dielectric and semiconducting materials and to propose a mechanism for their operation.

Most relevant results of topic III

- ✓ *In cationic and anionic exchange membranes for applications in fuel cells*, it was found that the electric response is modulated in “wet” conditions by the polarization phenomena and in the “dry” state by the dielectric relaxations corresponding to: (a) the segmental motions; and (b) the local fluctuations of the dipole moments of chemical functionalities of polymer matrix.
- ✓ *In polymer electrolytes based on polyethylene oxide for lithium and magnesium batteries*, it was demonstrated that the electric response depends on the electrode polarization event and on the segmental motions associated to both the chains coordinating the metal ion (α_{ion}, slow relaxation mode) and those “free” (α_{fast}, fast relaxation mode), i.e. the chains not coordinating the metal ions.

- ✓ *In materials based on ionic liquids*, it was revealed that the electric response is regulated by the polarization phenomena, thus demonstrating that the nanostructure of these systems plays a crucial role in modulating their electrical properties.
- ✓ *In dielectric and semiconducting materials*, it was determined that the electric response is correlated to the dipolar relaxation modes associated to the chemical functionalities typical of these materials.

Topic IV *- Environmental and BioInorganic Chemistry (from 1992 to 1994);*

In the framework of this topic, prof. Vito Di Noto contributed to:

a) the development and the application of models and methods for the study of the [receptor] – [inorganic complex] interactions;

b) the synthesis of platinum coordination complexes characterized by anticancer activity;

c) the development of methods for the analysis and the study of the spatial distribution of chemical elements in the environment.

Most relevant results of topic IV

The main results include the synthesis and the characterization of platinum complexes characterized by anticancer activity; the development of thermodynamic theoretical models for the study of the binding interactions [metal ion complex] – [supramolecular system] and the start up and coordination of an innovative laboratory for the sequential and simultaneous analysis of the elements in environmental and biological samples by means of Inductively-Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) mounting both a Meinhard and an Ultrasonic Nebulizer. The environmental studies were carried out in the framework of a project proposed and funded by the Department of the Environment of Venice.

Topic V *- High-yield heterogeneous catalysis of the Ziegler-Natta type for polymerization of olefins (from 1990 to 1992).*

From 1990 to 1992, prof. Di Noto carried out studies on high-yield Ziegler-Natta catalysis for the polymerization of olefins. In particular, he prepared and studied by means of spectroscopic techniques and wide- and small-angle powder X-ray diffraction, a large number of supported third-generation Ziegler-Natta catalysts. These materials were also tested in the olefin polymerization reaction.

RESEARCH PROJECTS

Principal Investigator of the following research projects:

- ✓ PRAT 2001: Scientific equipment for Research projects - Polymer electrolyte fuel cells: inorganic-organic hybrid polymer electrolytes and innovative electrodic systems (24 months).
- ✓ PRAT 2011: Advanced nano-electrocatalysts for ethanol oxidation in direct ethanol fuel cells (24 months).
- ✓ Strategic Project of the University of Padova: "From Materials for Membrane-Electrode Assemblies to Electric Energy Conversion and Storage Devices" (MAESTRA). From 1st January 2014 (36 months).
- ✓ European "Graphene Flagship": GRAFUS Project n° 14-GRPH-196 within the "Graphene Flagship" of the 7th framework program "Graphene-Based Revolutions in ICT and Beyond" (Project: 604391). From 1st October 2014 (18 months). **TRL 2-4**
- ✓ European "Graphene Flagship": Project "Graphene Core 1 - Graphene-based disruptive technologies" n° H2020-Adhoc-2014-20 within the "Graphene Flagship" of Horizon 2020 (Project: 696656). Activities carried out in the workpackage "Energy Generation". From 1st April 2016 (24 months). **TRL 3-5**
- ✓ "Development, characterization and tests in prototype devices of ion-exchange membranes for next-generation redox flow batteries", project funded by ENI S.p.A.; CUP: C56J15001560007, code D_N_COMM6_01. This is a "commercial" project. From 1st July 2016 (initially 24 months, extended to 48 months).
- ✓ "Advanced electrolytes for next-generation Anion-Exchange Membrane Fuel Cells" (AGNI), project funded by the University of Padova in the framework of the BIRD 2016 action; protocol: BIRD164837/16. From 1st January 2017 (24 months).
- ✓ European "Graphene Flagship": Project "Graphene Flagship Core Project 2" n° H2020-SGA-FET-GRAPHENE-2017 within the "Graphene Flagship" of Horizon 2020 (Project: 785219). Activities carried out in the workpackage "Energy Generation". From 1st April 2018 (24 months). **TRL 5-7**
- ✓ "Batterie a flusso di nuova generazione: preparazione, caratterizzazione e test in dispositivi-prototipo di membrane a scambio ionico ad elevata selettività ed integrazione di sistema con fonti primarie intermittenti" (Next-generation redox flow batteries: preparation, characterization and test in prototype devices of high-selectivity ion-exchange membranes and system integration with intermittent primary sources). Project funded by ENI S.p.A., contract 2500026228; the financial aspects of this project are handled by INSTM in the project INDPD01581. This is an "institutional" project. From 5 September 2018 to 4 November 2019 (14 months).

- ✓ *"Single-tank"*, *"single-pass"* redox flow battery systems with an innovative architecture and approach to operation. Project funded by FUJIFILM MANUFACTURING EUROPE B.V.; the financial aspects of this project are handled by INSTM in the project INDPD01588. This is an "institutional" project. From 01 November 2018 to 31 October 2019 (12 months).
- ✓ "Sviluppo di membrane a scambio ionico ad elevate selettività per applicazioni in batterie a flusso di nuova generazione" (Development of high-selectivity ion-exchange membranes for application in next-generation redox flow batteries). Project funded by ENI S.p.A., contract 2500026228; the financial aspects of this project are handled by INSTM in the project INDPD01779. This is an "institutional" project. From 20 January 2020 to 20 November 2021 (23 months).
- ✓ European "Graphene Flagship": Project "Graphene Flagship Core Project 3" n° H2020-SGA-FET-GRAPHENE-2019 within the "Graphene Flagship" of Horizon 2020 (Project: 881603). Activities carried out in the workpackage "Energy Generation". From 1st April 2020 (39 months). **TRL 6-8**
- ✓ Advanced Low-Platinum hierarchical Electrocatalysts for low-T fuel cells (ALPE), Upscaling project funded by EIT Raw Materials. From 1 January 2020 (41 Months).
- ✓ "Interplay between structure, properties, relaxations and conductivity mechanism in new electrolytes for secondary Magnesium batteries", Project funded by the Army Research Office of the U.S. Army. (36 Months).

Local coordinator of the following projects:

National projects:

- ✓ ex 60% of University of Padova: Electroactive materials and polymer electrolytes for the production and the reversible storage of energy and for the development of sensors: synthesis, studies and applications (since 1998).
- ✓ FISR 1999: "Electrolityc Materials and innovative electrodic systems for polymeric fuel cells". (24 months). Principal investigator: prof. B. Scrosati.
- ✓ PRIN 2000: "Electrochemical, vibrational and morphological characterization of polymer-based films for the development of transducers and transistors for gas and vapour sensors". Protocol: MM03025954_004. From 20th December 2000 (24 months). Principal investigator: prof. P. G. Zambonin.
- ✓ FISR 2001: "Development of composite protonic membranes and of innovative electrodic configurations for polymer electrolyte fuel cells". (42 months). Principal investigator: prof. B. Scrosati.
- ✓ PRIN 2002: "Synthesis of hybrid inorganic-organic thin films for sensors and studies with vibrational and broad-band dielectric spectroscopies of the correlations between the

functionality and the molecular dynamics". Protocol: 2002037994_003. From 16th December 2002 (24 months). Principal investigator: prof. P. G. Zambonin.

- ✓ PRIN 2004: "Polymers and hydrogels based on inorganic-organic hybrids for electroactive and dielectric thin films". Protocol: 2004034021_006. From 30th November 2004 (24 months). Principal investigator: prof. P. G. Zambonin.
- ✓ PRIN 2006: "Direct methanol fuel cells for portable electronics. Synthesis and study in prototype cells of hybrid inorganic-organic membranes and electrode materials". Protocol: 2006092700_003. From 9th February 2007 (24 months). Principal investigator: prof. P. Bettini.
- ✓ PRIN 2008: "Direct polymer electrolyte membrane fuel cells: synthesis and study in prototype cells of hybrid inorganic-organic membranes and electrode materials". Protocol: 200832JRN_004. From 22nd March 2010 (24 months). Principal investigator: prof. A. Stella.
- ✓ ALADIN - "Nuova generazione di sistemi di illuminazione/segnalazione intelligenti ad alta efficienza che incorporano generazione ed accumulo energetico", project code EE01_00003. Aladin has been funded in the framework of the Italian program "Industria 2015. From 1st May 2009 (28 months).
- ✓ Exploiting interplay between bacteria and microalgae for simultaneous wastewater removal and biorefinery: a microbial fuel cell proof-of-concept (EXOTICA). From 1st October 2016 (24 months). Principal investigator: prof. P. Mustarelli.
- ✓ Hierarchical electrocatalytsts with a low platinum loading for low-temperature fuel cells (HELPER). Project funded in the framework of the "Bando UNI-IMPRESA 2018". From 1st March 2019 (24 months).
- ✓ Alkaline Membranes and Platinum-free catalysts Enabling innovative, open electRochemical devices for Energy storage and conversion (AMPERE). Protocol: FISR2019_01294. Project funded in the framework of "Bando FISR 2019". From 1st March 2021 (24 months).
- ✓ Storage Research Infrastructure Eco-System – StoRIES. Project funded in the framework of the call "LC-GD-9-1-2020 - European Research Infrastructures capacities and services to address European Green Deal challenges". The project will last for 48 months.

International projects

- ✓ "Interplay between relaxations and structure in anion-exchange membranes (AES) by broadband electrical spectroscopy (BES), thermomechanical and vibrational studies", (contract n° W911NF-13-10400) in the framework of the MURI project "An Integrated Multi-Scale Approach for Understanding Ion Transport in Complex Heterogeneous Organic Materials", project funded by the Army Research Office, Principal Investigator: Prof. A. Herring (Colorado School of Mines, Golden, CO, USA) (72 months).

- ✓ “Versatile Ionomers for DIvalent CAlcium baTteries – VIDICAT” FET-Open call of Horizon 2020, Project 829145, From 1st March 2019 (48 months). Principal Investigator: Prof. Jean-Yves Sanchez, University “Charles III” of Madrid, Spain.

COLLABORATIONS

International Academic Collaborations

- ✓ Karlsruhe Institute of Technology, Germany (Prof. Stefano Passerini);
- ✓ FUNDACION CIDETEC, Spain (Prof. Luis César Colmenares);
- ✓ Institut Charles Gerhardt Montpellier, France (Prof. Laure Monconduit);
- ✓ LEPMI, France (Prof. Cristina Iojoiu);
- ✓ Grenoble-INP, France (Prof. Marian Chatenet);
- ✓ University of Lorraine, Nantes, France (Prof. Olivier Lottin);
- ✓ University College London, London, United Kingdom (Prof. Paul McMillan, Prof. Dan Brett, Prof. Cecilia Mattevi);
- ✓ Imperial College London, London, United Kingdom (Prof. Milo Shaffer);
- ✓ Technical University of Dresden, Dresden, Germany (Dr. Ali Shaygan Nia);
- ✓ University of Giessen, Germany (Prof. Juergen Janek)
- ✓ Institute for Frontier Materials, Deakin University, Australia (Prof. M. Forsyth);
- ✓ Physics Department, U.S. Naval Academy, Annapolis, MD, USA (prof. J.J. Fontanella and M. Wintersgill);
- ✓ Energy Institute, Hunter College of CUNY, New York, NY, USA (prof. S. Greenbaum);
- ✓ Department of Chemistry, Science University of Tokyo, Japan (prof. T. Furukawa, prof. S. Kobayashi);
- ✓ PECS Department, Medgar Evers College, New York, NY, USA (prof. M. Vittadello);
- ✓ Tokyo University of Agriculture and Technology, Tokyo, Japan (prof. H. Ohno, prof. Y. Tominaga);
- ✓ Institute for Chemical Research, Kyoto University, Japan (prof. S. Kohjiya);
- ✓ Graduate School of Engineering, Yokohama National University, Japan (prof. M. Watanabe);
- ✓ Japan Advanced Institute of Science and Technology, Sendai, Japan (prof. N. Matsumi);
- ✓ Department of Ceramics and Materials Engineering, Rutgers University, Piscataway, NJ, USA (prof. A. Safari);
- ✓ Chemistry Department, Max Planck Institute for Solid-State Research, Stuttgart, Germany (dr. K. D. Kreuer);

- ✓ Research Centre Juelich, Germany (prof. W. Lehnert, prof. D. Stolten);
- ✓ Fraunhofer Institut für Silicatforschung, Würzburg, Germany (prof. M. Popall);
- ✓ Zentrum für Sonnenenergie und Wasserstoff Forschung, Ulm, Germany (prof. J. Garche);
- ✓ Department of Technical Physics, Chalmers University of Technology, Gotheborg, Sweden (prof. P. Johansson);
- ✓ Department of Materials Science and Engineering, University Charles III of Madrid, Spain (prof. J. Y. Sanchez, Prof. A. Varez Alvarez);
- ✓ Department of Chemical and Biomolecular Engineering, University of Tennessee, Knoxville, USA (prof. T. Zawodzinski and prof. S. J. Paddison);
- ✓ Department of Chemical and Biomolecular Engineering, Department of Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee, Knoxville, (prof M. M. Mench);
- ✓ Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MS, USA (prof. B. Coughlin);
- ✓ Chemical and Biological Engineering Department, Colorado School of Mines, Golden, CO, USA (prof. A. Herring);
- ✓ CEA, Grenoble, France (prof. G. Gebel, Dr. Marie Heitzmann, Dr. Fabrice Micoud);
- ✓ Faculty of Chemistry, University of Warsaw, Poland (prof. P. J. Kulesza, Prof. I. A. Rutkowska);
- ✓ Department of Electrical and Electronic Technology, Faculty of Electrical Engineering and Communication, Brno University of Technology, Czech Republic (prof. M. Sedlarikova);
- ✓ Department of Chemistry and Chemical Biology, Northeastern University, Boston, MS, USA (prof. S. Mukerjee);
- ✓ The Henry Samueli School of Engineering, University of California, Irvine, USA (prof. P. Atanassov);
- ✓ Los Alamos National Laboratories, USA (Prof. P. Zelenay);
- ✓ Bar-Ilan University, Israel (Prof. Lior Elbaz);
- ✓ Vanderbilt University, USA (Prof. Peter Pintauro);
- ✓ Lawrence Berkeley National Laboratory , USA (Dr. Adam Weber, Dr. Ahmet Kusoglu);
- ✓ Oak Ridge National Laboratories, USA (Dr. David Cullen).

National Academic Collaborations

- ✓ Italian Institute of Technology, Genova (dr. F. Bonaccorso, dr. V. Pellegrini, dr. M. Prato);
- ✓ Department of Chemistry, University of Roma “La Sapienza” (prof. B. Scrosati e Dr.ssa M. A. Navarra);

- ✓ Department of Molecular Sciences and Nanosystems, University of Venezia (prof. S. Polizzi);
- ✓ CRS4, Pula, Italy (dr. D. Hofmann);
- ✓ Department of Energy, Politecnico di Milano, Italy (Prof. Ellie Paillard);
- ✓ Department of Civil, Environmental and Mechanical Engineering, University of Trento (prof. M. Fauri);
- ✓ Department of Materials Engineering and Industrial Technologies, University of Trento (prof. G. Sorarù, prof. R. Di Maggio);
- ✓ University of Rome "Tor Vergata", Department of Electronics Engineering (Prof. Aldo Di Carlo);
- ✓ Department of Applied Science and Technology, Politecnico di Torino (Prof. Claudio Gerbaldi);
- ✓ Department of Chemistry, University of Pavia (prof. E. Quartarone);
- ✓ Department of Industrial Engineering, University of Padova (prof. A. Bertucco, prof. M. Guarnieri, prof. A. Natali);
- ✓ Department of Materials Science, University of Milano-Bicocca (prof. P. Mustarelli, prof. R. Ruffo, Dr. Carlo Santoro);
- ✓ Department of Civil, Energy, Environmental, and Materials Engineering, Università Mediterranea di Reggio Calabria (Prof. Saveria Santangelo);
- ✓ National Research Council, Institute for Microelectronics and Microsystems, Bologna, Italy (Dr. Andrea Migliori, Dr. Vittorio Morandi);
- ✓ CNR-ICCOM, Florence (Dr. Francesco Vizza, Dr. Hamish Miller, Dr. Alessandro Lavacchi).
- ✓ CNR-ITAE, Messina (Dr. Vincenzo Baglio).

International Industrial Collaborations

- ✓ Fuel Cell Program, 3M Company, St. Paul, MN, USA (Dr. G. Haugen, Dr. S. Hamrock, Dr. R. Atanasoski);
- ✓ FuMA-Tech GmbH, St. Ingbert (Saarland), Germany (Dr. M. Schuster).
- ✓ SCHMIDLIN Labor+Service AG (Sarbach Neuheim Switzerland).
- ✓ FUJIFILM MANUFACTURING EUROPE B. V., The Neatherlands (Dr. Henk Jongerden, Dr. Jacko Hessing).
- ✓ ERAS LABO, France (Dr. Lionel Ogier).
- ✓ Toyota Motor Europe, Belgium (Dr. Isotta Cerri, Dr. Stephane Cotte)
- ✓ Amalyst, United Kingdom (Dr. David Hodgson)

National Industrial Collaborations

- ✓ ENI S.p.A. (Novara, Dr. Laura Meda, Dr. Chiara Gambaro);
- ✓ Centro Ricerche Giulio Natta; MONTELL S.p.A. (Ferrara);
- ✓ ECP-Enichem Polimeri (Ferrara);
- ✓ Agusta (Milano);
- ✓ Cryvet (Treviso);
- ✓ Automation Progetti (Padova);
- ✓ Spectro (Milano);
- ✓ Breton S.p.A., Castello di Godego, Treviso (Dr. S. Zeggio);
- ✓ Strumenti Scientifici CINEL s.r.l., Vigonza, Padova (Dr. E. Bongiovanni);
- ✓ COFI s.r.l., Castagnole, Treviso (Dr. L. Comin);
- ✓ TEXA S.p.A., Monastier, Treviso (Dr. C. Nogarino);
- ✓ SILYSIAMONT, Milano (Dr. R. Gallina).
- ✓ FIAMM Group, Montecchio Maggiore, Vicenza (Dr. G. Lodi)
- ✓ RIELLO, Legnago, Verona (Dr. E. Zambolin)
- ✓ Newa Tecno Industria s.r.l., Loreggia, Padova (Dr. G. Guoli)
- ✓ Centro ricerche Fiat, Orbassano, Torino (Dr. Stefano Pullini, Dr. Mauro Sgroi)

ACTIVITIES AS VISITING PROFESSOR

Prof. Vito Di Noto was visiting professor in several universities and research institutions:

- ✓ In the late '80's, he carried out research activity at the Hamburg Synchrotron (DESY), as a guest of prof. H. G. Zachmann of the Department of Macromolecular Chemistry.
- ✓ June-August 2001, he was in the Physics Department, U.S. Naval Academy, Annapolis, MD, USA, invited by prof. J. J. Fontanella to investigate the effect of pressure on the conduction mechanisms of polymer electrolytes by Broadband Electrical spectroscopy;
- ✓ June-July 2002, he was in the Physics Department, Hunter College of City University of New York (CUNY), NY, USA, invited by prof. S. Greenbaum, for studies on the diffusion coefficients of polymer electrolytes measured by solid-state NMR spectroscopy;
- ✓ January-March 2002 he carried out research activities in Japan as invited "visiting professor" in the framework of the "Japan Society for Promotion of Science (JSPS) Invitation Fellowship Program for Research in Japan". In this occasion, he gave seminars in the following universities and research institutions: Institute of Chemical Research of Kyoto University; Department of Biotechnology, Tokyo University of Agriculture & Technology; Department of

Chemistry and Biotechnology, Yokohama National University; Department of Chemistry Tokyo University of Science (TUS);

- ✓ In September 2007 he was in Tokyo University of Agriculture and Technology, Japan, invited by prof. H. Ohno, in order to carry out studies on polymer electrolytes doped with ionic liquids;
- ✓ August-September 2007 and December 2008 he was in the Department of Chemistry, Tokyo University of Science, Japan, invited by prof. T. Furukawa, in order to carry out studies on proton- and lithium-conducting polymer electrolytes by Broadband Electrical Spectroscopy up to 15 GHz.

SCIENTIFIC CITATIONS

Two of the papers published by prof. Vito Di Noto in 1997 were reviewed by international divulgation journals:

- ✓ V. Di Noto, M. Mecozzi, Appl. Spectrosc. 51 (1997) 1294, was reviewed by Photonics Spectra (February 1998);
- ✓ V. Di Noto, J. Mater. Res. 12 (1997) B393, was reviewed by Platinum Metal Reviews (vol.42, (2), April 1998).

Two of the papers published in the context of high yield Ziegler-Natta heterogeneous catalysts were included in the group of 271 papers, published between 1956 and 1998, making supported Ziegler-Natta catalysis one of the four "breakthroughs" of the chemistry for humankind (E. P. Moore "The rebirth of polypropylene: Supported Catalysis", Hanser Publishers, Münich, 1998). The cited papers are: (1) n° 247 - V. Di Noto et al., Makromol. Chem. 193 (1992) 1653; and (2) n° 248 - V. Di Noto et al., Makromol. Chem. 193 (1992) 123.

COVERS OF JOURNALS

- ✓ The journal “Macromolecular Chemistry and Physics” has dedicated the cover of Volume 203 of 2002 to the following publication: V. Di Noto et al., Macromol. Chem. Phys. 203 (2002) 354;
- ✓ The journal “ChemSusChem” has dedicated the cover of Volume 8(18) of 2015 to the following publication: F. Bertasi, V. Di Noto et al., ChemSusChem 8 (2015) 3069;
- ✓ The journal “Advanced Functional Materials” has dedicated the cover of Volume 26(27) of 2016 to the following publication: F. Bertasi, V. Di Noto et al., Adv. Funct. Mater. 26 (2016) 4860.
- ✓ The “Journal of Applied Polymer Science” dedicated the cover of Volume 135, Issue 13 to the following publication: S. Todros, P. G. Pavan, P. Pachera, G. Pace, V. Di Noto, A. N. Natali, J. Appl. Polym. Sci. 135 (2018) 46014.
- ✓ The “Journal of Materials Chemistry A” dedicated the inside back cover of Issue 48, 2020 to the following publication: High valence transition metal-doped olivine cathodes for superior energy and fast cycling lithium batteries, G. Pagot, M. Bandiera, K. Vezzù, A. Migliori, R.

Bertoncello, E. Negro, V. Morandi, V. Di Noto, J. Mater. Chem. A 8 (2020) 25727. The inside back cover is cited as in the following: J. Mater. Chem. A 8 (2020) 26175 https://doi.org/10.1039/D0TA90289F

INVITED PAPERS

He was invited to write five papers (two Editorials and three Forewords) by the Organizing Committee of the "ISPE-12" and "ISPE-13" international conferences (International Symposia on Polymer Electrolytes), to provide an overview on the development of the research in the topic of polymer electrolytes. He was also the Guest Editor of the Special Issues of the journals "Electrochimica Acta" and "The International Journal of Hydrogen Energy" dedicated to the "ISPE-12" and "ISPE-13" international conferences.

He was invited by the Organizers of the Symposium "Advanced Materials for Energy Applications" (held in the framework of the international conference "AMPT-15", hosted in Madrid, Spain on 14-17 December 2015) to write the Foreword of the Virtual Special Issue of the Journal "Electrochimica Acta" dedicated to that Symposium, which he also co-edited.

He was invited by the International Society of Solid State Ionics (ISSI) to write an Editorial to provide an overview on the development of the research in the topic of solid state ionic conductors, to be published on the Special Issue of the Elsevier journal *"Solid State Ionics"* dedicated to the 21st International Conference on Solid State Ionics (SSI-21) held in Padova, Italy on 18-23 June 2017. He was also invited to write the Foreword of the same Special Issue, where he is also the Managing Guest Editor.

He was invited to submit one paper to the Special Issue of the journal "ChemElectroChem" of Wiley entitled: *"Non-Precious-Metal ORR Catalysis"*. The paper is entitled: *"(Co, Ni)$Sn_{0.5}$ nanoparticles supported on hierarchical CN-graphene-based electrocatalysts for the oxygen reduction reaction"* and was published on ChemElectroChem 5 (2018) 2029-2040.

He was invited to submit one paper to the Themed Issue of Physical Chemistry Chemical Physics "Bunsentagung 2019: Functional Materials". The paper is entitled "Structural analyses of blended Nafion/PVDF electrospun nanofibers" and was published on *Phys. Chem. Chem. Phys.* 21 (2019) 10357-10369.

He is also one of the Guest Editors of the *"Focus Issue on Heterogeneous Functional Materials for Energy Conversion and Storage"* of the Journal of the Electrochemical Society, that is open to receive contributions between 25 July and 23 October 2019.

He is also one of the Guest Editors of the "Focus Issue on Heterogeneous Functional Materials for Energy Conversion and Storage" of the Journal of the Electrochemical Society.

He is the Guest Editor of the Special Issue *"Challenges of Batteries in the Post Li-Ion Era"* of the MDPI Journal *"Batteries"*. The Special Issue is open to receive contributions between 1 April 2020 and 30 November 2020.

He was invited to submit one review on magnesium batteries, which was published on the Journal of Power Sources as in the following: R. Dominko, J. Bitenc, R. Berthelot, M. Gauthier, G. Pagot, V. Di Noto, Magnesium batteries: current picture and missing pieces of the puzzles, J. Power Sources 478, 229027 (2020). DOI: 10.1016/j.jpowsour.2020.229027.

He is one of the Editors of the Vol. 98, no. 10 of the ECS Transactions. The volume is entitled *"Molten Salts and Ionic Liquids 22"* and it was published in 2020 (ISBN-print: 1938-5862). The full list of the Editors of the volume is as follows: D. P. Durkin, P. C. Trulove, A. Bund, A. Ispas, V. Di Noto, W. M. Reichert, R. A. Mantz, H. C. De Long, M. Mizuhata, M. Ueda.

He is the Lead Guest Editor of the Special Issue of Electrochimica Acta *"And Yet Electrochemical Energy Storage and Conversion Moves in 2021"*, which is open to receive manuscript from 20 March to 20 September 2021.

Editorials:

- ✓ V. Di Noto, S. Lavina, G. A. Giffin, E. Negro, B. Scrosati. "Polymer electrolytes: Present, past and future", Electrochim. Acta 57 (2011) 4;
- ✓ V. Di Noto, T. A. Zawodzinski, A. M. Herring, G. A. Giffin, E. Negro, S. Lavina. "Polymer electrolytes for a hydrogen economy", Int. J. Hydrog. Energy 37 (2012) 6120.

Forewords:

- ✓ V. Di Noto, "Foreword 12th International Symposium on Polymer Electrolytes (ISPE-12)", Electrochim. Acta, 57 (2011) 1;
- ✓ V. Di Noto, "Foreword", Int. J. Hydrogen Energy 37 (2012) 6119;
- ✓ V. Di Noto. "ISPE–13 Foreword", Int. J. Hydrogen Energy 39 (2014) 2715;
- ✓ V. Di Noto, J. Y. Sanchez, A. Varéz Alvarez. "Foreword", Electrochim. Acta, 245 (2017), 1075.
- ✓ V. Di Noto, "Preface: 21st International Conference on Solid State Ionics", Solid State Ionics 329 (2019) 155.
- ✓ D.Guyomard, V. Di Noto, M. Forsyth, P. Poizot, T. Rojo, K. Zaghib, B. Lucht, D. Aurbach, Preface — JES Focus Issue on Challenges in Novel Electrolytes, Organic Materials, and Innovative Chemistries for Batteries in Honor of Michel Armand, Journal of The Electrochemical Society, 167 (2020) 070001
- ✓ D. Aurbach, T. F. Fuller, D. E. Cliffel, W. K. S. Chiu, V. Di Noto, S. Goplan, N. Liu, A. H. Suroviec, Preface-JES Focus Issue on Heterogeneous Functional Materials for Energy Conversion and Storage, *J. Electrochem. Soc.* 167, 050001 (2020). DOI: 10.1149/1945-7111/ab84fe

Prof. Vito Di Noto acted as co-editor and contributed an overview on electrocatalysis in the Summer 2015 Issue of the quarterly ECS magazine "Interface", as follows:

- ✓ Editorial: A. M. Herring, V. Di Noto, "Electrochemical Energy Conversion";
- ✓ Contribution: V. Di Noto, E. Negro, K. Vezzù, F. Bertasi, G. Nawn, "Origins, Developments and Perspectives of Carbon Nitride-Based Electrocatalysts for Application in Low-Temperature FCs".

EDITORIAL BOARDS

- ✓ Prof. Vito Di Noto was voted to join and is in the Advisory Board of *"Electrochimica Acta"* (Publisher: Elsevier; ISSN: 0013-4686); from 2016.
- ✓ He belongs to the Editorial Advisory Board of *"Current Nanomaterials"* (Publisher: Bentham Science; ISSN: 2405-4623); from 2018.
- ✓ He is Associate Editor and on the Board of the Journal *"Frontiers in Chemistry"* (Publisher: Frontiers Media S.A.; ISSN: 2296-2646), responsible of the Electrochemistry section. From 2018.
- ✓ He is Editor of the Section "Energy, transport and environment" of the journal "European Journal of Materials" (Publisher: Taylor and Francis; ISSN: 2688-9277). From 2021.
- ✓ He was invited to join and is in the Editorial Board of *"Ionics"* (Publisher: Springer; ISSN: 1862-0760/0947-7047); from 2017.
- ✓ He belongs to the Editorial Board of *"Batteries"* (Publisher: MDPI; ISSN: ISSN 2313-0105); from 2017.
- ✓ He is an Editor of the journal "*Reviews on Advanced Materials Science" (URL:* https://www.degruyter.com/view/j/rams?rskey=mdaegp&result=2 Publisher: De Gruyter; ISSN: 1605-8127); from February 2019.
- ✓ He is on the Editorial Board of the journal *"BMC Materials"* (URL: https://bmcmaterials.biomedcentral.com/ Publisher: Springer Nature; ISSN: 2524-8138); from February 2019.
- ✓ He is on the Editorial Board of the Journal *"Polymers"* (URL: https://www.mdpi.com/journal/polymers Publisher: MDPI; ISSN: 2073-4360); from April 2019.
- ✓ He is on the Editorial Board of the Journal *"Solids"* (URL: https://www.mdpi.com/journal/solids Publisher: MDPI; ISSN: 2673-6497); from June 2020.
- ✓ He is on the Editorial Board of the *"Journal of Ionic Liquids"* (URL: https://www.journals.elsevier.com/journal-of-ionic-liquids); ISSN: 2772-4220; from July 2021.

ACTIVITY AS REVIEWER OF INTERNATIONAL JOURNALS

- ✓ *American Chemical Society:* ACS Sustainable Chemistry and Engineering; ACS Applied Energy Materials; ACS Applied Materials and Interfaces; ACS Nano; Analytical Chemistry; Chemistry

of Materials; Journal of the American Chemical Society; Journal of Physical Chemistry A, B and C; Langmuir; Energy and Fuels; Inorganic Chemistry; Macromolecules; Small

- ✓ *Elsevier:* Applied Surface Science; Applied Catalysis B – Environmental; Catalysis Communications; Catalysis Today; Chemical Physics; Chemical Physics Letters; Coordination Chemistry Reviews; Electrochimica Acta; European Polymer Journal; Journal of Catalysis; Journal of Electroanalytical Chemistry; Journal of Physics and Chemistry of Solids; Journal of Industrial and Engineering Chemistry; Journal of Membrane Science; Journal of Non-Crystalline Solids; Journal of Supercritical Fluids; Surface and Coatings Technology; Materialia; The International Journal of Hydrogen Energy; Journal of Power Sources; Materials Science and Engineering B; Materials Chemistry and Physics; Microporous and Mesoporous Materials; Polymer; Polymer Degradation and Stability; Polyhedron; Solid State Ionics; Solid State Sciences; Vibrational Spectroscopy.
- ✓ Materials Research Society: Journal of Materials Research.
- ✓ RSC Publishing: ChemComm; Chemical Science; Energy and Environmental Science; Journal of Materials Chemistry A; Nanoscale; PCCP; Polymer Chemistry; RSC Advances; Soft Matter.
- ✓ Springer: Journal of Solid-State Electrochemistry; Ionics.
- ✓ The Electrochemical Society: The Journal of the Electrochemical Society; Electrochemical and Solid-State Letters; ECS Transactions.
- ✓ Wiley: Advanced Energy Materials; Advanced Functional Materials; Advanced Materials; Advanced Science; Advanced Materials Interfaces; ChemCatChem; ChemElectroChem; ChemSusChem; Chemical Engineering and Technology; Energy Technology; Fuel Cells; International Journal of Energy Research; Journal of Polymer Science; Journal of Polymer Science part B; Journal of Applied Polymer Science; Macromolecular Chemistry and Physics; Physica Status Solidi B; Wiley Interdisciplinary Reviews: Energy and Environment; Small.
- ✓ Nature Publishing Group: Nature materials, Nature Communications.
- ✓ Others: The Brazilian Journal of Chemical Engineering, Energies, ISRN Spectroscopy; Journal of Nanoscience and Nanotechnology, Batteries, Catalysts.

REVIEWER OF INTERNATIONAL SCIENTIFIC PROJECTS

- ✓ The European Commission (Horizon 2020);
- ✓ The European Research Council, for Starting, Consolidator and Advanced Grants;
- ✓ Program UNA4CAREER, Universidad Complutense de Madrid, Spain;
- ✓ Research Foundation Flanders';
- ✓ United States – Israel Binational Science Foundation;
- ✓ Chilean National Science and Technology Commission;
- ✓ German-Israeli Foundation for Scientific Research and Development;

- ✓ American Chemical Society Petroleum Research Fund;
- ✓ National Science Center (Poland);
- ✓ A*Midex (France);
- ✓ National Science Foundation (NSF).

ORGANIZATION OF INTERNATIONAL MEETINGS AND RELATED ACTIVITIES

Since 2003, Prof. Vito Di Noto has been an Active Member of the Electrochemical Society (ECS). Since 2013, he has belonged to the Executive Committee of the Energy Technology Division (ETD) and is involved in many of the activities of ECS. He is currently a *"member-at-large"* of the Executive Committee of both the Energy Technology Division and of the Physical and Analytical Electrochemistry Division of the ECS. In recent years, he was and is involved in the organization/co-organization of a number of thematic sessions of ECS, as follows:

- ✓ 224th Meeting of the Electrochemical Society, held in San Francisco, California, USA, from 27 October to 1 November 2013, session: "B12: Stationary and Large Scale Electrical Energy Storage Systems 3 - Battery Division/Energy Technology Division/Industrial Electrochemistry and Electrochemical Engineering Division".
- ✓ 225th Meeting of the Electrochemical society, held in Orlando, Florida, USA, on 11-15 May 2014, sessions: "A1: Batteries and Energy Technology Joint General Session – Battery Division/Energy Technology Division"; "H4: Charge Transfer: Electrons, Protons, and Other Ions 2 - Physical and Analytical Electrochemistry Division/High Temperature Materials Division"; "H8: Spectroelectrochemistry 2 - Physical and Analytical Electrochemistry Division".
- ✓ 226th Meeting of the Electrochemical Society, held in Cancun, Mexico, on 5-10 October 2014, session "A2: Batteries Beyond Lithium Ion – Battery Division/Energy Technology Division".
- ✓ 227th Meeting of the Electrochemical Society, held in Chicago, Illinois, USA, on 24-28 May 2015, sessions: "B01: Carbon Nanostructures and Devices - Carbon Nanostructures for Energy Conversion - Nanocarbons Division/Battery Division/Energy Technology Division/Physical and Analytical Electrochemistry Division"; "B06: Graphene and Beyond: 2D Materials - Nanocarbons Division/Dielectric Science and Technology Division/Physical and Analytical Electrochemistry Division"; "L11: Structure and Relaxations in Soft Ion-Conducting Materials - Energy Technology Division/Battery Division/Physical and Analytical Electrochemistry Division".
- ✓ 228th Meeting of the Electrochemical Society, to be held in Phoenix, Arizona, USA, on 11-16 October 2015, sessions: "A03: Batteries Beyond Lithium-Ion – Battery Division/Energy Technology Division"; "A05: Electrolytes and Electrochemical Interfaces in Energy Storage Systems – Battery Division/Energy Technology Division"; "A07: Intermetallic Anodes – Battery Division"; "B01 - Carbon Nanostructures: Fullerenes to Graphene – Nanocarbons

Division/ Dielectric Science and Technology Division / Physical and Analytical Electrochemistry Division".

- ✓ 229th Meeting of the Electrochemical Society, to be held in San Diego, California, USA, on 29 May – 3 June 2016, sessions: "A02: Future and Present Advanced Lithium Batteries and Beyond – a Symposium in the Honor of Prof. Bruno Scrosati – Battery Division/Physical and Analytical Electrochemistry Division"; "F02: Engineering the Interface between Catalysis and Electrocatalysis – Industrial Electrochemistry and Electrochemical Engineering Division/Energy Technology division/Physical and Analytical Electrochemistry Division"; "L06: Ionic Liquids as Electrolytes – Physical and Analytical Electrochemistry Division".
- ✓ 230th Meeting of the Electrochemical Society, to be held in Honolulu, Hawaii, USA, on 9-14 October 2016, sessions: "A05: Beyond Li-ion Batteries – Battery Division/Physical and Analytical Electrochemistry Division/CSE Division"; "A02: ECS Battery Symposium in Honor of Prof. Zempachi Ogumi: Challenges in Advanced Analytical Tools and Techniques for Batteries – Battery Division/Energy Technology Division".
- ✓ 231st Meeting of the Electrochemical Society, held in New Orleans, Louisiana, USA, on 28 May-2 June 2017, sessions: "A03: Battery Electrolytes - Physical and Analytical Electrochemistry Division"; "B01: Carbon Nanostructures for Energy Conversion - Energy Technology Division/Physical and Analytical Electrochemistry Division"; "L02: Ion-Conducting Polymeric (or, Polymer-based) Materials - Physical and Analytical Electrochemistry Division".
- ✓ 232nd Meeting of the Electrochemical Society, held in National Harbor, USA, on 1-5 Oct 2017, session: "L06: Physical and Analytical Electrochemistry of Ionic Liquids 6 - Physical and Analytical Electrochemistry Division/ Energy Technology Division/ Organic and Biological Electrochemistry Division"
- ✓ 233rd Meeting of the Electrochemical Society, held in Seattle, WA, USA, on 13-17 May 2018, sessions "A03: Li-ion Batteries and Beyond - Battery Division/Physical and Analytical Electrochemistry Division"; "B01: Carbon Nanostructures for Energy Conversion and Storage – Nanocarbons Division/Physical and Analytical Electrochemistry Division"; "I04: Materials for Low Temperature Electrochemical Systems 4 - Energy Technology Division/Industrial Electrochemistry and Electrochemical Engineering Division/Physical and Analytical Electrochemistry Division"; "L04: Charge Transfer: Electrons, Protons, and Other Ions 3 - Physical and Analytical Electrochemistry Division/Energy Technology Division"; "L05: Oxygen Reduction Reactions - Physical and Analytical Electrochemistry Division/Energy Technology Division".
- ✓ 234th Meeting of the Electrochemical Society/AiMES 2018, held in Cancun, Mexico, on 30 Sept – 4 Oct 2018, session "A02 - Challenges in Novel Electrolytes, Organic Materials, and Innovative Chemistries for Batteries - in Honor of Michel Armand - Battery Division/Energy Technology Division/Physical and Analytical Electrochemistry Division".
- ✓ 235th Meeting of the Electrochemical Society, held in Dallas, Texas, on 26-31 May 2019, sessions "B01 - Carbon Nanostructures for Energy Conversion and Storage – Nanocarbons

Division/Battery Division/Physical and Analytical Electrochemistry Division"; "B07 - Inorganic/Organic Nanohybrids for Energy Conversion - Nanocarbons Division/Physical and Analytical Electrochemistry Division"; "I05 - Heterogeneous Functional Materials for Energy Conversion and Storage - High Temperature Materials Division/Battery Division/Energy Technology Division/Physical and Analytical Electrochemistry Division"**;** "L04 - Polyoxometallates and Nanostructured Metal Oxides in Efficient Electrocatalysis, Energy Conversion and Charge Storage - Physical and Analytical Electrochemistry Division/Energy Technology Division".

- ✓ 236th Meeting of the Electrochemical Society, held in Atlanta, Georgia, on 13-17 October 2019, sessions "A03 - Fast Electrochemical Processes and Devices 3 (Electrochemical Capacitors and Batteries) – Battery Division/Energy Technology Division"; "A07 - Solid State Batteries – Battery Division/Physical and Analytical Electrochemistry Division"; "B01 - Carbon Nanostructures: From Fundamental Studies to Applications and Devices – Nanocarbons Division/ Physical and Analytical Electrochemistry Division"; "L03 - Charge Transfer: Electrons, Protons, and Other Ions 4 - Physical and Analytical Electrochemistry Division/Energy Technology Division".
- ✓ PRIME 2020, held in Honolulu, Hawaii, on 4-9 October 2020, sessions "F02 - Advances in Application and Theory of Electrochemical Impedance Spectroscopy – Industrial Electrochemistry and Electrochemical Engineering Division/Energy Technology Division/Physical and Analytical Electrochemistry Division"; "L02 - Molten Salts and Ionic Liquids 22 - Physical and Analytical Electrochemistry Division/Electrodeposition Division/ Energy Technology Division"; "L06 - Fundamental Aspects of Electrochemical Conversion of Carbon Dioxide 2 - Physical and Analytical Electrochemistry Division/Energy Technology Division/ KECS Photoelectrochemistry".
- ✓ 239th Meeting of the Electrochemical Society, held in Chicago, USA, on 30 May – 3 June 2021, sessions "A07 - Ion Coordination and Dynamics in Battery Electrolytes, Interfaces and Interphases – Battery Division"; "B01 - Carbon Nanostructures for Energy Conversion and Storage – Nanocarbons Division/Battery Division/Energy Technology division"; "B06 - 2D Layered Materials from Fundamental Science to Applications – Nanocarbons Division/Dielectric Science and Technology Division/Energy Technology Division/Interdisciplinary Science and Technology Subcommittee"; "B07 - Light Energy Conversion with Metal Halide Perovskites, Semiconductor Nanostructures, and Inorganic/Organic Hybrid Materials – Nanocarbons Division"; "F03 - Characterization of Porous Materials 9 – Industrial Electrochemistry and Electrochemical Engineering Division/Energy Technology Division"; "L06 - Nanostructured Functional Materials for Electrochemistry – Physical and Analytical Electrochemistry Division/Energy Technology Division".

Prof. Vito Di Noto chaired/co-chaired several thematic sessions at ECS meetings, as follows:

- ✓ 221st Meeting of the Electrochemical Society, held in Seattle, USA on 6-10 May 2012, in the session "I4: Electrocatalysis Applied to Fuel Cells and Electrolyzers".
- ✓ 223rd Meeting of the Electrochemical Society, held in Toronto, Canada, on 12-16 May 2013, in the session "I3: Ethanol oxidation".
- ✓ 224th Meeting of the Electrochemical society, held in San Francisco, USA, on 27 October-1 November 2013, in the sessions: "B12: Stationary and Large Scale Electrical Energy Storage Systems 3".
- ✓ 225th Meeting of the Electrochemical society, held in Orlando, Florida, USA on 11-15 May 2014, in the session "H8: Spectroelectrochemistry 2".
- ✓ 226th Meeting of the Electrochemical Society, held in Cancun, Mexico, on 5-10 October 2014, in the oral session "A2: Batteries Beyond Lithium Ion"; and in the poster session "Batteries Beyond Li-ion Posters".
- ✓ 227th Meeting of the Electrochemical Society, held in Chicago, USA, on 24-28 May 2015, in the oral sessions "B01: Carbon Nanostructures for Energy Conversion"; "B06: Graphene and Beyond: 2D Materials"; "L11: Structure and Relaxations in Soft Ion-Conducting Materials"; and in the poster session "Structure and Relaxations in Soft Ion-Conducting Materials".
- ✓ 228th Meeting of the Electrochemical Society, held in Phoenix, Arizona, USA, on 11-16 October 2015, in the oral sessions: "A03: Batteries Beyond Lithium-Ion – Battery Division/Energy Technology Division"; "A05: Electrolytes and Electrochemical Interfaces in Energy Storage Systems – Battery Division/Energy Technology Division"; "A07: Intermetallic Anodes – Battery Division".
- ✓ 229th Meeting of the Electrochemical Society, held in San Diego, California, USA, on 29 May – 3 June 2016, sessions: "A02: Future and Present Advanced Lithium Batteries and Beyond – a Symposium in the Honor of Prof. Bruno Scrosati – Battery Division/Physical and Analytical Electrochemistry Division"; "L06: Ionic Liquids as Electrolytes – Physical and Analytical Electrochemistry Division".
- ✓ 230th Meeting of the Electrochemical Society, held in Honolulu, Hawaii, USA, on 9-14 October 2016, session: "A05: Beyond Li-ion Batteries – Battery Division/Physical and Analytical Electrochemistry Division/CSE Division".
- ✓ 231st Meeting of the Electrochemical Society, held in New Orleans, Louisiana, USA, on 28 May-2 June 2017, session: "L02: Ion-Conducting Polymeric (or, Polymer-based) Materials - Physical and Analytical Electrochemistry Division".
- ✓ 232nd Meeting of the Electrochemical Society, held in National Harbor, MD, USA, on 1-5 October 2017, sessions: "A03: Battery Student Slam 2 – Battery Division"; "I01D: Polymer Electrolyte Fuel Cells 17 (PEFC 17) - Catalyst Activity/Durability for Hydrogen(-Reformate) Acidic Fuel Cells - Energy Technology Division/Battery Division/Industrial Electrochemistry and Electrochemical Engineering Division/Physical and Analytical Electrochemistry Division"; "I01E: Polymer Electrolyte Fuel Cells 17 (PEFC 17) - Materials for Alkaline Fuel Cells and

Direct-Fuel Fuel Cells - Energy Technology Division/Battery Division/Industrial Electrochemistry and Electrochemical Engineering Division/Physical and Analytical Electrochemistry Division"; "L01: Physical and Analytical Electrochemistry General Session - Physical and Analytical Electrochemistry Division"; "L03: Physical and Analytical Electrochemistry of Ionic Liquids 6 - Physical and Analytical Electrochemistry / Energy Technology / Organic and Biological Electrochemistry".

- ✓ 233rd Meeting of the Electrochemical Society, held in Seattle, WA, USA, on 13-17 May 2018, sessions: "L04: Charge Transfer: Electrons, Protons and Other ions 3 – Electrons 2 – Li and other ions 3 – Physical and Analytical Electrochemistry Division / Energy Technology Division"; "L05: Oxygen Reduction Reactions - 1, 2, 12 – Physical and Analytical Electrochemistry Division / Energy Technology Division"; "I04: Materials for low temperature electrochemical systems 4 – Proton Exchange Membrane - Energy Technology Division/Industrial Electrochemistry and Electrochemical Engineering Division/Physical and Analytical Electrochemistry Division".
- ✓ AiMES 2018, held in Cancun, Mexico, from 30 September to 4 october 2018, session: "A02: Challenges in Novel Electrolytes, Organic Materials and Innovative Chemistries for Batteries – In Honor of Michel Armand – Battery Division".
- ✓ 235th Meeting of the Electrochemical Society, held in Dallas, TX, USA on 26-30 May 2019, sessions: "B07: Light Energy Conversion with Metal Halide Perovskites, Semiconductor Nanostructures, and Inorganic/Organic Hybrid Materials – Nanocarbons Division, Physical and Analytical Electrochemistry Division"; "I05: Heterogeneous Functional Materials for Energy Conversion and Storage 2 – High-Temperature Energy, Materials, & Processes Division, Battery Division, Energy Technology Division, Physical and Analytical Electrochemistry Division"; "L01: Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session and Grahame Award Symposium – Physical and Analytical Electrochemistry Division"; "L04: Polyoxometallates and Nanostructured Metal Oxides in Efficient Electrocatalysis, Energy Conversion, and Charge Storage – Physical and Analytical Electrochemistry Division, Energy Technology Division".
- ✓ 236th Meeting of the Electrochemical Society, held in Atlanta, Georgia, on 13-17 October 2019, sessions: "A07 - Solid State Batteries – Battery Division/Physical and Analytical Electrochemistry Division"; "B01 - Carbon Nanostructures: From Fundamental Studies to Applications and Devices – Nanocarbons Division/ Physical and Analytical Electrochemistry Division".
- ✓ PRIME 2020, held in Honolulu, Hawaii, on 4-9 October 2020, session "F02 - Advances in Application and Theory of Electrochemical Impedance Spectroscopy – Industrial Electrochemistry and Electrochemical Engineering Division/Energy Technology Division/Physical and Analytical Electrochemistry Division".
- ✓ 239th Meeting of the Electrochemical Society, held in Chicago, USA, on 30 May – 3 June 2021, session "L06 - Nanostructured Functional Materials for Electrochemistry – Physical and Analytical Electrochemistry Division/Energy Technology Division".

Prof. Vito Di Noto is also an active member of the American Chemical Society (ACS), of the International Society of Electrochemistry (ISE), of "Società Chimica Italiana - Divisione di elettrochimica" (Italian Chemical Society –Electrochemistry Division) and of "Associazione Italiana Chimica per Ingegneria" (Italian Association of Chemistry for Engineering). Prof. Di Noto is an associated member of the "Consiglio Nazionale delle Ricerche - Istituto per l'Energia e le Interfasi – IENI" (National Research Council – Institute for Energy and Interphases). He also belongs to the "Italian group for electrochemical energy storage – GISEL".

Prof. Di Noto was the Conference Chairman of:

- ✓ 12th International Symposium on Polymer Electrolytes (ISPE-12), which was held in Padova between 29 August and 3 September 2010;
- ✓ International meeting "7th GIJME" (7th German-Italian-Japanese Meeting of Electrochemists) held in Padova from 14 to 16 June 2014;
- ✓ International meeting "21st International Conference on Solid State Ionics – SSI-21" held in Padova from 18 to 23 June 2017.

Prof. Di Noto co-organized:

- ✓ 13th International Symposium on Polymer Electrolytes (ISPE-13), which was held in Selfoss, Iceland on 26-31 August 2012;
- ✓ 2014 MRS Spring Meeting & Exhibit, held in San Francisco, California (USA), on 21-25 April 2014, session "M – Fuel Cells, Electrolyzers and other Electrochemical Energy Systems";
- ✓ 20th International conference on Solid State Ionics (SSI-20), held in Keystone (Colorado, USA) on 14-19 June 2015, session B: "Polymer Electrolyte Fuel Cells & Electrolyzers";
- ✓ The First International Symposium on Magnesium Batteries (Mag-Batt), held in Blautal/Ulm, Germany, 21-22 July 2016 (as he is part of the Scientific Committee of the Meeting);
- ✓ 15th International Symposium on Polymer Electrolytes (ISPE-15), which was held in Uppsala, Sweden on 15-19 August 2016;
- ✓ The Second International Symposium on Magnesium Batteries (MagBatt II), held in Ulm, Germany, 27-28 September 2018 (as he is part of the Scientific Committee of the Meeting).
- ✓ International Symposium on Electrocatalysis (Electrocat2018), held in Szczyrk, Poland from August 29th to September 1st 2018 as part of the International Steering and Advisory Board.
- ✓ The 69th Meeting of the International Society of Electrochemistry (69th ISE Meeting), held in Bologna, Italy from 2 to 7 September 2018 as the Lead Organizer of Symposium 7 "Electrochemical Systems for Energy Conversion: Fuel Cells and Electrolyzers".

- ✓ The international conference "6th International Conference on Ionic Liquids for Electrochemical Devices", held in Rome, Italy between 9th and 11th September 2018 as one of the Co-Chairs. URL: www.iled2018.it
- ✓ The 21st Italian Electrochemical Meeting "Giornate dell'Elettrochimica Italiana – GEI 2019", to be held in Padova, Italy between 8 and 12 September 2019. URL: http://www.chimica.unipd.it/GEI2019/
- ✓ The workshop "Platinum Group Metal-free Electrocatalysts: Structure-to-Property Relations, Materials Synthesis and Integration in Catalysts Layers", to be held in the Telluride Science Research Center, Colorado, USA, between 25 and 29 June 2019. URL: https://www.telluridescience.org/meetings/workshop-details?wid=782
- ✓ The "First Italian Workshop on Energy Storage – (IWES 2021)", held between 24 and 26 February 2021, http://www.giselnetwork.it/workshop-2021
- ✓ The workshop "Italian Virtual Workshop on Fuel Cells 2021 - (IVWFC 2021)", held between 16 and 19 March 2021, https://ivwfc.mater.unimib.it/

He chaired the following thematic sessions in the symposia above:

- ✓ 2014 MRS Spring Meeting & Exhibit, held in San Francisco, California (USA), on 21-25 April 2014, session "M4 – AEM and PEM Membranes";
- ✓ 20th International conference on Solid State Ionics (SSI-20), held in Keystone (Colorado, USA) on 14-19 June 2015, session B: "Polymer Electrolyte Fuel Cells & Electrolyzers" (both oral and poster).
- ✓ The 69th Meeting of the International Society of Electrochemistry (69th ISE Meeting), held in Bologna, Italy from 2 to 7 September 2018 in Symposium 7 "Electrochemical Systems for Energy Conversion: Fuel Cells and Electrolyzers".

AWARDS

- ✓ Prof. Vito Di Noto was awarded the "Premio Alceste Mion 2000" for the chemical research in the field of polymer electrolytes by the University of Padova, in 2000;
- ✓ In occasion of the bicentenary of Volta's discovery, Prof. Vito Di Noto was awarded the "Premio Focus 2000 Speciale" by the Italian scientific center "Alessandro Volta" for the development of magnesium batteries (9 May 2000);
- ✓ He was awarded a fellowship by the Japan Society for the Promotion of Science (JSPS) in the framework of the program "FY2001 JSPS Invitation Fellowship Program for Research in Japan (Short-term)" to carry out activity as a visiting professor at the Tokyo University of Science in Japan in 2002;
- ✓ ***"Best Oral Presentation"***, awarded to the following contribution:
  V. Di Noto, M. Vittadello, J.R.P. Jayakody, A.N. Khalfan, S.G. Greenbaum.

Two new siloxanic proton conducting membranes. Part II: Proton conductivity mechanism and NMR study (Oral presentation).
9th International Symposium on Polymer Electrolytes, Mragowo, Poland, 22nd – 27th August 2004.

- ✓ ***"Best Poster Presentation"***, awarded to the following contribution:
  S. Lavina, M. Piga, E. Negro, **V. Di Noto**.
  Broadband dielectric spectroscopy: a tool to study the effects of nanofillers in hybrid membranes for application in PEMFCs (Poster).
  E-MRS 2009 Spring Meeting, Strasbourg, France, 8th – 12th June 2009 (Poster).

- ✓ ***"The PCCP best poster award",*** won by the following contribution:
  A. Nale, E. Negro, Y. Herve Bang, K. Vezzù, F. Bertasi, C. Sun, G. Nawn, G. Pagot, G. Pace, S. Polizzi, **V. Di Noto**.
  Hierarchical graphene-supported $PtNi_x$, $AuNi_x$ and $FeSn_x$ *"core-shell"* carbon nitride electrocatalysts for the oxygen reduction reaction (Poster).
  21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017.

- ✓ **23 June 2017.** He received a *"Certificate of Appreciation"* from the President of the International Society for Solid State Ionics, Prof. Han-Ill Yoo *"for excellence in organizing the 21st International Conference on Solid State Ionics in Padova, Italy between 18th and 23rd June 2017."*

- ✓ **September 2017 – February 2018. He was honored with the assignment of the *"Cátedra de Excelencia uc3m-Santander"* (Chair of Excellence uc3m-Santander) in the University "Carlos III" of Madrid, Spain**.

- ✓ **12 February 2018**. He received the prize *"PREMIO "AMMINISTRAZIONE, CITTADINI, IMPRESE" 2018"* (Prize for Public Administration, Citizens, Enterprises 2018, see http://www.italiadecide.it/ricerca/80-premio_amministrazione_cittadini_imprese_2018), for applied/demonstration research with the following motivation: *"per le sue attività nell'ambito dello sviluppo di materiali funzionali avanzati e architetture innovative per dispositivi di conversione e di stoccaggio elettrochimico dell'energia"* (for his activities in the field of the development of advanced functional materials and innovative architectures for electrochemical energy conversion and storage devices). The prize was bestowed by the association ITALIADECIDE (http://www.italiadecide.it/). The prize was delivered in Montecitorio (the Italian House of the Representatives) by Federica Mogherini (the High Representative of the European Union for Foreign Affairs and Security Policy) at the presence of the President of Italy, Sergio Mattarella, and the President of the Chamber of Deputies, Laura Boldrini. See http://webtv.camera.it/archivio?id=12511&position=0

- ✓ **28 May 2019.** He received a *"Certificate of Recognition"* from Prof. Wilson K. S. Chiu, the Lead Organizer of Symposium I05. The award is issued *"in grateful appreciation of the contribution as a keynote speaker during 235th ECS meeting in Dallas, Texas held from May 26-30, 2019. The presentation of 'Interplay between Properties, Electrical Response and Conductivity Mechanism in Hybrid Inorganic-Organic Ion-Exchange Membranes for*

Electrochemical Application' added great value to the technical content of Symposium I05 Heterogeneous Functional Materials for Energy Conversion and Storage 2."

- ✓ He has been inducted to hold the title of **"Fellow of the Electrochemical Society"** during the 235th Meeting of the Electrochemical Society that was held in Dallas, TX, on 26-30 May 2019. He was officially bestowed this Award during the 236th Meeting of the Electrochemical Society in Atlanta, GA, on 13-17 October 2019.
- ✓ **He was assigned the *"Cátedra de Excelencia uc3m-Santander"* (Chair of Excellence uc3m-Santander) in the University "Carlos III" of Madrid, Spain**. Prof. Di Noto will hold this position for three months during 2020.

COMMISSIONS OF TRUST

- ✓ From September 2014 to September 2016 he was Member of the ETD Srinivasan Award Review Subcommittee, within the framework of the Electrochemical Society.
- ✓ From September 2014 to September 2016 he was Member of the ETD Graduate Student Award Review Subcommittee, within the framework of the Electrochemical Society.
- ✓ From September 2016 to September 2017 he was Chair of the ETD Srinivssan Award Review Subcommittee, within the framework of the Electrochemical Society.
- ✓ From September 2016 to September 2017 he was Chair of the ETD Graduate Student Award Review Subcommittee, within the framework of the Electrochemical Society.
- ✓ Since July 2021 he was Member of the ETD Srinivasan Award Review Subcommittee, within the framework of the Electrochemical Society.
- ✓ Since 22 November 2017 to 10 June 2021 he was Vice-Coordinator of SubProgramme 1 - *"Electrolytes"* of the *"Joint Research Programme on Fuel Cells and Hydrogen technologies (FCs&H_2)"* of the *"European Energy Research Alliance (EERA)"*.
- ✓ Since 11 June 2021 he is the Coordinator of SubProgramme 1 - *"Electrolytes"* of the *"Joint Research Programme on Fuel Cells and Hydrogen technologies (FCs&H_2)"* of the *"European Energy Research Alliance (EERA)"*.
- ✓ Since November 2020 he belongs to the *"Joint Programme on Energy Storage"* of the *"European Energy Research Alliance (EERA)"*.
- ✓ Prof. Di Noto is the Treasurer of the International Society of Solid State Ionics (ISSI) in the years 2018-2019.
- ✓ Since 2020 Prof. Vito Di Noto belongs to the Working Group 1 – *"New and emerging battery technologies"* and to the Working Group 3 – *"Advanced materials"* of Batteries Europe.
- ✓ Prof. Di Noto is one of the two Chairpersons of the ISPE Meetings for the years 2018-2021.
- ✓ Prof. Di Noto belongs to the Scientific Committee of the **European Fuel Cells and Hydrogen Piero Lunghi Conference – EFC21**, which will be virtually held on December 15-17, 2021.
- ✓ **Since June 2021 Prof. Di Noto represents UNIPD at Batteries Europe Partnership Association (BEPA), and belongs to the Technical Working Groups of BEPA**, as follows: (i) TWG1 - Raw materials and Recycling; (ii) TWG2 - Advanced materials and manufacturing; (iii) TWG3 - Battery end-uses and applications; (iv) TWG4 - Safety and Reliability; and (v) TWG5 – Sustainability.
- ✓ **Prof. Di Noto belongs to the *"Strategic Technical Committee"* (Comitato Tecnico Strategico) constituted by Veneto Sviluppo S.p.A. and Regione Veneto in compliance with the DGR n. 526 of 27 April 2021.** The purpose of this Committee is to analyze the economic phenomena of the Venetian Region to define strategic guidelines in the post-COVID recovery

timeframe. This will allow to devise plans to maximize the impact of the funds obtained through the Next Generation EU (Recovery Plan). The Committee will be tasked to carry out studies and planning to provide the Venetian Regional Government with evaluation and strategic guidelines in a medium- and long-term time framework.

INVITATIONS TO THEMATIC WORKSHOPS

1. V. Di Noto, M. Fauri. "Recenti sviluppi nel campo delle batterie al Magnesio". Invited seminar at the ENI Research Center, S. Donato Milanese, Milan, Italy, 21 December 1999;
2. V. Di Noto, "Structure, properties and proton conductivity of Nafion/[$(TiO_2)(WO_3)_{0.148}$]$YTiO_2$ nanocomposite membranes". 2nd TUS-International Collaboration Workshop, Tokyo, Japan, 10-11 December 2008;
3. V. Di Noto, "Hybrid inorganic-organic proton-conducting membranes based on Nafion and oxocluster nanofillers: structural features, relaxations and conductivity". 4th TUS-International Collaboration Workshop, Tokyo, Japan, 8-10 December 2009;
4. V. Di Noto, "Development of Plurimetallic Nano-electrocatalysts based on Carbon Nitride Supports for the ORR Processes in PEM Fuel Cells". 5th Japanese-Italian-German Meeting, Sendai, Japan, 24-26 October 2010;
5. V. Di Noto, E. Negro, "Nano-electrocatalysts based on Carbon Nitride Supports for the ORR and FOR in PEM Fuel Cells." 4th Santa Fe Workshop on Materials for Energy Conversion: Catalysts for Ethanol Oxidation end Electro-oxidation. Santa Fe, USA, 4-6 November 2010 (invited by. Prof. P. Atanassov);
6. V. Di Noto, "Hybrid inorganic-organic polymer electrolytes: synthesis, structure and conductivity". Colorado School of Mines, Golden, CO, 2 September 2011 (invited by Prof. A. Herring);
7. V. Di Noto, "Interplay between nanostructure and proton conductivity of Nafion-based nanocomposite membrane". Max Planck Institute for Solid-State research of Stuttgart, Germany, 20 January 2012 (invited by Prof. J. Maier);
8. V. Di Noto, "Hybrid inorganic-organic polymer electrolytes: synthesis, structure and conductivity". Fraunhofer-Institut für Silicatforschung ISC di Wuerzburg, Germany, 29 February 2012, (invited by Prof. M. Popall);
9. V. Di Noto, "Interplay between nanostructure and proton conductivity of Nafion-based nanocomposite membranes". Forschungszentrum Juelich, Germania, 2 March 2012 (invited by Prof. D. Stolten and W. Lehnert);
10. V. Di Noto, "Plurimetallic Nano-electrocatalysts based on Carbon Nitride Supports for the ORR Processes in PEM Fuel Cells". 6th Japanese-Italian-German Meeting, Neu-Ulm, University of Ulm, Germany, 4-7 July 2012;
11. V. Di Noto, "Broadband electric spectroscopy: a powerful tool for the determination of charge transfer mechanisms in ion conductors". Symposium on Ionic Materials, 14-15 March 2013, JAIST, Ishikawa, Japan (invited by prof. N. Matsumi);
12. V. Di Noto, "Hybrid inorganic-organic proton conducting membranes for PEMFCs: synthesis, properties and relaxations". Department of Chemical and Biomolecular Engineering,

University of Tennessee, Knoxville, Tennessee (USA), 22 October 2013 (invited by Prof. S. Paddison);

13. V. Di Noto, "Broadband electric spectroscopy: a powerful tool for the determination of charge transfer mechanisms in ion conductors". National Laboratory, Oak Ridge, Tennessee (USA), 23 October 2013 (invited by Prof. A. Sokolov);
14. V. Di Noto, "Plurimetallic alloys bonded in carbon nitride "shells" supported on "cores" of conducting nanoparticles as electrocatalysts for the oxygen reduction reaction (ORR)". Department of Chemical and Nuclear Engineering, University of New Mexico, Albuquerque, New Mexico (USA), 6 November 2013 (invited by Prof. P. Atanassov);
15. V. Di Noto, "Charge transfer mechanisms in Anionic Membranes by Broadband Electric Spectroscopy". 7th Bishop Lodge Workshop: Materials for Energy Conversion (Alkaline Membrane Fuel cell), University of New Mexico, Santa Fe (USA), 3-5 November 2013 (invited by prof. P. Atanassov);
16. V. Di Noto, "An innovative family of electrocatalysts for the oxygen reduction reaction (ORR): plurimetallic alloy nanoparticles embedded in carbon nitride "shells" supported on conducting nanostructured "cores" ", Department of Chemistry and Chemical Biology, Northeastern University, Boston (USA), 16 May 2014 (invited by prof. S. Mukerjee);
17. V. Di Noto, "GRAFUS – Graphene and related materials as supports for innovative metal carbon nitride electrocatalysts for anion exchange membrane fuel cells" Graphene Flagship: WP9 Progress meeting, Dresden (Germania), 22 October 2014;
18. V. Di Noto, "Hybrid Electrolytes for secondary Li and Mg batteries", Workshop on interfaces in batteries, Helmholtz Institute Ulm, Karlsruhe Institute of Technology (Germany), 20-21 November 2014 (invited by prof. S. Passerini);
19. V. Di Noto , "Next-Generation Ion-Exchange Membrane Fuel Cells with Graphene-Based Electrocatalysts", Graphene Study 2016, Les Houches (France), 17-22 January 2016 (invited by Dr. F. Bonaccorso);
20. V. Di Noto, F. Bertasi, K. Vezzù, E. Negro, G. Pagot, "Ionic Liquid -Based Electrolytes for Secondary Mg", 2nd Graz Magnesium Battery, Graz, Austria, 27 – 28 September 2016 (invited by Prof. J. Garche);
21. V. Di Noto, "Transport Phenomena in Polymers and Hybrid Materials", EPF 8th Summer School – XXXVIII Convegno-Scuola "Mario Farina", Gargnano, Brescia (Italy), 14-19 May 2017. (invited by Prof. Jean-François Gerard).
22. V. Di Noto, "Advanced High-Performing Nanostructured Materials for Polymer Electrolyte Membrane Fuel Cells" Israel-Italy Scientific Workshop in Nano-Materials & Nano Technologies in Clean-Tech Applications, Tel Aviv (Israel), 15 March 2018. Invited by the Israeli Ministry of Science and Technology (MOST), the Italian Ministry of Foreign Affairs, the Embassy of Italy and the Italy-Israel Chamber of Commerce and Industry in Israel; the workshop was delivered at the presence of Mr. Perez Vazan, Director General, Ministry of Science and Technology of Israel, and H.E. Gianluigi Benedetti, Ambassador of Italy in Israel.
23. V. Di Noto, "*'Closed'* and *'Open'* systems in the field of electrochemical conversion and storage of energy", the 1st Italian-Korean Bilateral Workshop on Electrochemical Energy Storage

(ItaKa), University of Milano-Bicocca, Milan, Italy, 25-26 October 2018 (invited by Prof. Riccardo Ruffo, University of Milano-Bicocca).

24. V. Di Noto, "Interplay between Physicochemical Features and Electrochemical Performance in the ORR of 'Platinum-Free' Electrocatalysts Based on Hierarchical Graphene Supports", talk delivered at the 3rd meeting of the Israel Fuel Cell Consortium, satellite workshop to the 6th International Smart Mobility Summit, 29-30 October 2018 (invited by Prof. David Zitoun, Bar-Ilan University).
25. V. Di Noto, "Graphene as key component in Electrocatalysts for Next-Generation Ion-Exchange Membrane Fuel Cells", talk delivered at the EPSRC Centre for Doctoral Training in Graphene Technology, Cambridge, UK, 3 May 2019 (Invited by Prof. Andrea Ferrari, University of Cambridge).
26. V. Di Noto, "Recent Advances in Lithium-Air Batteries", talk delivered at the International Spring School of Electrochemistry, Castellammare del Golfo (TP), Italy, between 19 and 23 May 2019.
27. V. Di Noto, "PEM Fuel Cells - Focus on Electrocatalysts", lecture delivered at the International Summer School Hydrogen Nancy, France, between 5 and 8 July 2021.

MEMBER OF THE COMMISSION FOR THE ITALIAN NATIONAL SCIENTIFIC HABILITATION

From 2017 to 2019, Prof. Vito Di Noto is one of the five members of the Commission awarding the Italian National Scientific Habilitation ("Abilitazione Scientifica Nazionale) to both Associate Professors and Full Professors in the "Settore Concorsuale 03/B2 – Fondamenti Chimici delle Tecnologie" (Competition Area 03/B2 - Chemical basis of technology applications).

MEMORANDA OF UNDERSTANDING

Since 2008 Prof. Vito Di Noto promoted the establishment of several Memoranda of Understanding between the University of Padova and other major academic and research institutions, including: Fraunhofer ISC, Juelich Research Centre, The University of Tennessee, Knoxville, Tokyo University of Agriculture and Technology, and Yokohama National University.

MEMBER OF THE COMMISSION FOR THE ENROLLMENT OF PERMANENT STAFF IN NATIONAL OR INTERNATIONAL INSTITUTIONS

1. Procedure for the enrollment of a tenured Assistant Professor in the Academic Discipline CHIM/03, (General and Inorganic Chemistry) at the Department of Chemistry "Giacomo Ciamician" of the University of Bologna, Italy, August 2008;

2. Competition to bestow the Habilitation to become Assistant Professor at the University of Montpellier, France, September 2015;

3. Procedure for the enrollment of a full-time Full Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Rome “La Sapienza”, Italy, 2016;

4. Procedure for the enrollment of a full-time Type-B Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the Polytechnic University of Turin, Italy, 2016;

5. Procedure for the enrollment of a full-time Type-B Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Brescia, Italy, 2016;

6. Procedure for the enrollment of a full-time Type-A Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Naples, Italy, 2016;

7. Procedure for the enrollment of a full-time Type-A Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the Polytechnic University of Turin, Italy, 2016;

8. Procedure for the enrollment of a full-time Type-B Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Padova, Italy, 2017.

9. Procedure for the enrollment of a full-time Full Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the Politecnico di Torino, Italy, 2018.

10. Procedure for the enrollment of a full-time Associate Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Rome “La Sapienza”, Italy, 2018.

11. Procedure for the enrollment of a full-time Full Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Pisa, Italy, 2018.

12. Procedure for the enrollment of a full-time Type-A Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Rome “La Sapienza”, Italy, 2020.

13. Procedure for the enrollment of a full-time Type-B Assistant Professor (LAW 240/2010), in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the “Politecnico di Milano”, Italy, 2020.

14. Procedure for the enrollment of a full-time Associate Professor (LAW 240/2010) in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Palermo, Italy, 2021.

15. Procedure for the enrollment of a full-time Full Professor (LAW 240/2010) in the Academic Discipline CHIM/07 (Chemical foundations of technologies) at the University of Brescia, Italy, 2021.

MEMBER OF THE COMMISSION FOR THE EVALUATION OF THE FINAL PhD DISSERTATION IN NATIONAL OR INTERNATIONAL INSTITUTIONS

1. Title: "Proton conducting inorganic-organic matrices for fuel cells based on sulfonyl- and heterocyclic-functionalized polycondensates via sol-gel processing"; candidate: Dr Stephane Jacob; institution: Institut National Polytechnique de Grenoble, France; supervisor: Christiane Poinsignon; date: 8 November 2004;
2. Title: "Polymer Electrolyte Conductivity and the Vogel Equation"; candidate: Dr. Fred McKenna; institution: Department of Physics and Astronomy, University of Oklahoma, USA; supervisor: prof. John E. Moore Furneaux; date: 1 September 2004;
3. Title: "Mise en forme par extrusion de polymère fonctionnels conducteurs conducteur protoniques: polysulfones sulfones/liquides ioniques. Application dans le domaine des piles à combustible"; candidate: Dr. Yannick Molmeret; institution: University of Grenoble, France; supervisor: prof. Nadia El Kissi; date: 29 April 2010;
4. Title: "Compréhension par établissement de courbes d'étalonnage de la structure des membranes perfluorées sulfoniques pour pile à combustible"; candidate: Dr. Eddy Moukheiber; institution: University of Grenoble, France; supervisor: prof. Lionel Flandin; date: 5 July 2011;
5. Member of the Commission for the evaluation of the final exam of the Doctoral School in Chemistry of the University of Palermo, Italy, 14-15 November 2011;
6. Title: "Electrolytes for Magnesium-Air Batteries"; candidate: Dr. Timothy Seng Kiat Khoo; institution: Monash University, Australia; supervisor: prof. Maria Forsyth, date: 2012;
7. Title: "Nano-structured Polymer Electrolytes based on ionic Liquids for High-Temeprature PEMFCs"; candidate: Dr. Rakhi Sood; institution: University of Grenoble, France; supervisor: Dr. Christina Iojoiu; date: 6 December 2012;
8. Title: "Physical Properties and Interactions of Ionic Liquids and Ionic Liquid Li-salt Mixtures"; candidate: Dr. Jagath Pitawala; institution: Chalmers University of Technology, Sweden; supervisors: prof. Aleksandar Matic and prof. Per Jacobsson; date: 23 November 2012;
9. Title: "Etude mécanistique de la réaction d'oxydation de l'éthanol sur électrocatalyseurs à base de Pt, Rh, SnO_2 sur support carboné en milieu acide"; candidate: Dr. Antoine Bach Delpeuch; institution: Institute Polytechnique de Grenoble, France; supervisors: prof. Marian Chatenet and dr. Carsten Cremers; date: 24 November 2014;
10. Title: «Reactivity of Perfluoropolyether Peroxides on Carbon Based Materials and their Application in Proton Exchange Membrane Fuel Cells"; candidate: Dr. Massimo Gola; institution: Department of Chemistry Materials and Chemical Engineering "Giulio Natta" of the Polytechnic of Milan, Italy; supervisor: prof. Walter Navarrini; date: 17 December 2014.
11. Title: «Non-Equilibrium Synthesis of Nanocrystalline Transition Metal Chalcogenides Catalysts for Electrochemical Fuels Production"; candidate: Dr. Giorgio Giuffredi; institution:

Department of Chemistry Materials and Chemical Engineering "Giulio Natta" of the Polytechnic of Milan, Italy; supervisor: Dr. Fabio Di Fonzo; date: 20 October 2020.

12. Title: «Structure of Cathode-Electrolyte interfaces and correlation with ionic conductivity in solid oxide fuel cell devices"; candidate: Dr. Alessandro Chiara; institution: Department of Physics and Chemistry, University of Palermo, Italy; supervisor: Prof. Antonino Martorana; date: December 2020.
13. Title: "Impact of degradation and aging on properties of PFSA membranes for fuel cells"; candidate: Dr. Mylène Robert; institution: University of Lorraine, France; supervisors: Prof. Olivier Lottin and Dr. Jean-Christophe Perrin; date: 12 January 2020.

SUPERVISION OF DISSERTATIONS

1. Supervisor of several PhD Thesis of the School of Molecular Sciences, Materials Science and Chemical Engineering of University of Padova, Italy
2. Supervisor of numerous MS and BS thesis in Chemistry, Industrial Chemistry, Chemical Engineering, Electrical Engineering, Medicinal Chemistry and Technology at the University of Padova, Italy

SOME ALUMNI

PhD Students:

Davide Barreca (National Research Council, Italy); Michele Vittadello (Medgar Evers College, City University of New York), Maurizio Furlani (Chalmers University of Technology, Sweden), Maria Viviani, Mariella D'Acunzi, Federico Bertasi (University of Padova), Nicola Boaretto, Matteo Piga, Silvia Gross (National Research Council, Italy), Chuanyu Sun, Gioele Pagot, Paolo Damioli, Afaaf Rahaat Alvi, Giovanni Crivellaro, and others.

Postdoctoral Scholars:

Vanni Zago, Simone Biscazzo, Vera Münchow (European Patent Office), Gwen Giffin (University of Oklahoma, USA), Savitha Thayumanasundaram (Bharathiar University, India), Malathi Jeyapandian (Bharathiar University, India), Enrico Negro (University of Padova, Italy), Keti Vezzù (University of Padova, Italy), Federico Bertasi (University of Padova, Italy), Ricardo Gonçalves Carvalho (University of Aveiro, Portugal), Susana Solano Arana, Antoine Bach Delpeuch (Grenoble Polytechnic Instute, France), Graeme Nawn (University of Victoria, Canada), Angeloclaudio Nale (University of Milano-Bicocca, Italy), Chuanyu Sun (University of Padova, Italy), Gioele Pagot (University of Padova, Italy), Agnieszka Zlotorowicz (University of Warsaw, Poland) and others.

Prof. Vito Di Noto

PUBLICATION LIST

The Scientific performace of prof. V. Di Noto:

a) 311 published papers: 261 are peer-reviewed papers (ISI+SCOPUS), 10 are book chapters, 30 patents (13 international and 17 national, 13 were sold) and 10 are papers on proceedings.

b) The meeting contributions are 296, of which:

   i. 199 are oral presentations in international symposia, among which 83 are invited: 60 invited, 16 Keynotes and 8 Plenary Lectures;

   ii. 24 are oral presentations in national meetings, of which 4 are invited.

c) ***h-index = 48 (Google Scholar), more than 7720 citations (July 2021). h-index = 45 (Scopus), more than 6220 citations (July 2021). h-index = 43 (ISI), more than 6000 citations (July 2021).***

1. Peer-reviewed papers

Number of papers = **261**

2021

261. G. Pagot, K. Vezzù, C. S. Martinez-Cisneros, C. Antonelli, B. Levenfeld, A. Varez, J. Y. Sanchez, **V. Di Noto**, Interplay between Conductivity, Matrix Relaxations and Composition of Ca-Polyoxyethylene Polymer Electrolytes, *ChemElectroChem* **8**, 2459-2466 (2021), DOI: 10.1002/celc.202100475
260. G. Pagot, K. Vezzù, S. G. Greenbaum, Hybrid twin-metal aluminum–magnesium electrolytes for rechargeable batteries, *J. Power Sources* **493**, 229681 (2021). DOI: 10.1016/j.jpowsour.2021.229681
259. C. Sun, E. Negro, A. Nale, G. Pagot, K. Vezzù, T. A. Zawodzinski, L. Meda, C. Gambaro, V. Di Noto, An efficient barrier toward vanadium crossover in redox flow batteries: The bilayer [Nafion/$(WO_3)_x$] hybrid inorganic-organic membrane, *Electrochim. Acta* **378**, 138133 (2021). DOI: 10.1016/j.electacta.2021.138133
258. **V. Di Noto**, E. Negro, A. Nale, G. Pagot, K. Vezzù, P. Atanassov, Hidden in plain sight: unlocking the full potential of cyclic voltammetry with the thin-film rotating (ring) disk electrode studies for the investigation of oxygen reduction reaction electrocatalysts, *Curr. Opin. Electrochem.* **25**, 100626 (2021). DOI: 10.1016/j.coelec.2020.08.008
257. K. Kobayashi, G. Pagot, K. Vezzù, F. Bertasi, **V. Di Noto**, Y. Tominaga, Effect of plasticizer on the ion-conductive and dielectric behavior of poly(ethylene carbonate)-based Li electrolytes, *Polymer J.* **53**, 149-155 (2021). DOI: 10.1038/s41428-020-00397-4

2020

256. B. Zakrzewska, B. Dembinska, S. Zoladek, I. A. Rutkowska, J. Zak, L. Stobinski, A. Malolepszy, E. Negro, **V. Di Noto**, P. J. Kulesza, K. Miecznikowski, Prussian-blue-modified reduced-graphene-oxide as active support for Pt nanoparticles during oxygen electroreduction in acid medium, *J. Electroanal. Chem.* **875**, 114347 (2020). DOI: 10.1016/j.jelechem.2020.114347
255. R. Dominko, J. Bitenc, R. Berthelot, M. Gauthier, G. Pagot, **V. Di Noto**, Magnesium batteries: current picture and missing pieces of the puzzles, J. Power Sources **478**, 229027 (2020). DOI: 10.1016/j.jpowsour.2020.229027.
254. S. Zoladek, M. Blicharska-Sobolewska, A. A. Krata, I. A. Rutkowska, A. Wadas, K. Miecznikowski, E. Negro, K. Vezzù, **V. Di Noto**, Heteropolytungstate-assisted fabrication and deposition of catalytic silver nanoparticles on different reduced graphene oxide supports: electroreduction of oxygen in alkaline electrolyte, *J. Electroanal. Chem.* **875**, 114694 (2020). DOI: 10.1016/j.jelechem.2020.114694
253. G. Pagot, M. Bandiera, K. Vezzù, A. Migliori, R. Bertoncello, E. Negro, V. Morandi, **V. Di Noto**, High Valence Transition Metals Doped Olivine Cathodes for Superior Energy and Fast

Cycling Lithium Batteries, J. Mater. Chem. A **8,** 25727–25738 (2020). DOI: 10.1039/d0ta06865a

252. C. S. Martinez-Cisneros, A. Fernandez, C. Antonelli, B. Levenfeld, A. Varez, K. Vezzù, **V. Di Noto**, J. Y. Sanchez, Opening the door to liquid-free polymer electrolytes for calcium batteries, *Electrochim. Acta* **353**, 136525 (2020), DOI: 10.1016/j.electacta.2020.136525
251. B. Dembinska, A. Zlotorowicz, M. Modzelewska, K. Miecznikowski, I. A. Rutkowska, L. Stobinski, A. Malolepszy, M. Krzywiecki, J. Zak, E. Negro, **V. Di Noto**, P. J. Kulesza, Low-Noble-Metal-Loading Hybrid Catalytic System for Oxygen Reduction Utilizing Reduced-Graphene-Oxide-Supported Platinum Aligned with Carbon-Nanotube-Supported Iridium, *Catalysts* **10**, 689 (2020). DOI:10.3390/catal10060689.
250. D.Guyomard, **V. Di Noto**, M. Forsyth, P. Poizot, T. Rojo, K. Zaghib, B. Lucht, D. Aurbach, Preface – JES Focus Issue on Challenges in Novel Electrolytes, Organic Materials, and Innovative Chemistries for Batteries in Honor of Michel Armand, *J. Electrochem. Soc.* **167**, 070001 (2020). DOI: 10.1149/1945-7111/ab84fe
249. D. Aurbach, T. F. Fuller, D. E. Cliffel, W. K. S. Chiu, **V. Di Noto**, S. Goplan, N. Liu, A. H. Suroviec, Preface-JES Focus Issue on Heterogeneous Functional Materials for Energy Conversion and Storage, *J. Electrochem. Soc.* **167**, 050001 (2020). DOI: 10.1149/1945-7111/ab84fe
248. G. Pagot, K. Vezzu, A. Nale, M. Fauri, A. Migliori, V. Morandi, E. Negro, **V. Di Noto**, Chrysalis-like Graphene Oxide Decorated Vanadium-based Nanoparticles: an Extremely High-Power Cathode for Magnesium Secondary Batteries, *J. Electrochem. Soc.* **7**, 070547 (2020), DOI: 10.1149/1945-7111/ab7fb4
247. A. Kusoglu, K. Vezzù, G.A. Hegde, G. Nawn, A.R. Motz, H.N. Sarode, G.M. Haugen, Y. Yang, S. Seifert, M.A. Yandrasits, S. Hamrock, C.M. Maupin, A.Z. Weber, **V. Di Noto**, A.M. Herring, Transport and Morphology of a Proton Exchange Membrane Based on a Doubly Functionalized Perfluorosulfonic Imide Side Chain Perflourinated Polymer, Chem. Mater. **32**, 38-59 (2020).
246. K. Vezzù, G. Nawn, E. Negro, G. Crivellaro, J. W. Park, R. Wycisk, P.N. Pintauro, **V. Di Noto**, Electric Response and Conductivity Mechanism of Blended Polyvinylidene Fluoride/Nafion Electrospun Nanofibers, *J. Am. Chem. Soc.* **142**, 801-814 (2020).
245. **V. Di Noto**, E. Negro, A. Nale, P. J. Kulesza, I. A. Rutkowska, K. Vezzù, G. Pagot, Correlation between Precursor Properties and Performance in the Oxygen Reduction Reaction of Pt and Co *"Core-shell"* Carbon Nitride-based Electrocatalysts, *Electrocatalysis* **11**, 143-159 (2020).

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2. Book Chapters (10)

1. **V. Di Noto**, S. Lavina, F. Scomazzon, F. Bortolozzo, M. Vidali
   Studio chemiometrico dell'azoto interconvertibile biochimicamente nelle acque di superficie: bacino n° 7 della Laguna Veneta.
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   I metalli nelle acque di superficie: bacino n° 7 della Laguna Veneta.
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3. **V. Di Noto**, C. Furlan, S. Lavina
   Caratterizzazione chimica di reperti solidi provenienti dalla tomba di Tartini, in *Giuseppe Tartini e la chiesa di Santa Caterina a Padova*, Ed. Padova (1999), Padova, Italy, pp. 275-288.
4. **V. Di Noto**.
   Infrared Spectroscopy: A tool in the structural investigations of macromolecules, in *Spectroscopic Techniques in Biophysics*. G.M. Giacometti and G. Giacometti Eds., IOS Press (2001), Amsterdam, Netherlands, pp. 39-72.
5. **V. Di Noto**, E. Negro, G. Pace, S. Lavina
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   Hybrid inorganic-organic polymer electrolytes: synthesis, structure and conductivity mechanism, in *Polymer electrolytes: fundamentals and applications*, D. Santos, C. Sequeira, Eds., Woodhead Publishing Ltd. (2010), Cambridge, UK, pp. 219-277.
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   Broadband Dielectric Spectroscopy: A Powerful Tool for the Determination of Charge Transfer Mechanisms in Ion Conductors, in *Solid State Proton Conductors: Properties and Applications in Fuel Cells*, P. Knauth, M. L. Di Vona, Eds., John Wiley & Sons (2012), Weinheim, Germany, pp. 107-180.
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10. J. K. Zak, E. Negro, I. A. Rutkowska, B. Dembniska, **V. Di Noto**, P. J. Kulesza.
    Graphene-Based Nanostructures in Electrocatalytic Oxygen Reduction, in *Encyclopedia of Interfacial Chemistry: Surface Science and Electrochemistry*, Elsevier (2018), Amsterdam, The Netherlands, pp. 651-659.

3. Patents

National patents: ***17*** (16 are patents and 1 is an utility model).
International patents: ***13*** (6 granted and 6 pending).
Sold patents: ***13***.

3.1. National Patents (17)

1. S. Bresadola, **V. Di Noto**, L. Pavanello. (1994)
   Procedimento per ottenere cloruro di magnesio in forma attiva ad elevato disordine strutturale, da utilizzare particolarmente per la realizzazione di supporti per catalizzatori tipo Ziegler-Natta.
   Application number VE1994A000051, filling date 27th December 1994, published as: ITVE940051 (A1). Applicant: Consiglio Nazionale delle Ricerche. Patent n°0001268684 date of patent 6th March 1997, published as IT1268684 (B1).
2. **V. Di Noto**, G. Valeri. (1999)
   Polimeri elettrolitici quali materiali con caratteristiche d'inibizione dell'accumulo d'elettricità statica sulle superfici.
   Application number FE1999A000001, filling date 7th January 1999, published as: ITFE990001 (A1). Applicants: Renzo Albertini, Cryvet s.r.l. Patent n°0001313084 date of patent 30th May 2002.
   This patent was internationally extended: patent n° 1 in the "International Patents" list.
3. **V. Di Noto**, M. Fauri. (1999)
   Batterie primarie (non ricaricabili) e secondarie (ricaricabili) a base di elettroliti polimerici basati su ioni magnesio.
   Application number PD1999A000179, filling date 29th July 1999, published as: ITPD990179 (A1). Applicant: University of Padova. Patent n°0001307220 date of patent 29th October 2001, published as IT1307220 (B1).
   This patent was internationally extended: patent n° 2 in the "International Patents" list.
4. **V. Di Noto**, R. Gliubizzi, S. Lavina, E. Negro, G. Pace. (2006)
   Elettrocatalizzatori a base di carbonitruri mono/pluri-metallici per celle a combustibile polimeriche tipo PEFC e DMFC e per elettrogeneratori di H_2.
   Application number PD2006A000141, filling date 18th April 2006, published as: ITPD20060141 (A1). Applicant: University of Padova. Patent n°0001370457 date of patent 15th February 2010.
   This patent was internationally extended: patent n° 3 in the "International Patents" list.
5. **V. Di Noto**, E. Negro. (2008)
   Elettrocatalizzatori "nocciolo-guscio" a base di carbonitruri mono/plurimetallici per celle a combustibile a bassa temperatura (PEMFC, DMFC, AFC, e PAFC) ed elettrolizzatori.
   Application number PD2008A000188, filling date 26th June 2008, published as: ITPD20080188 (A1). Applicant: University of Padova. Patent n°0001390356 date of patent 5th August 2011.
   This patent was internationally extended: patent n° 4 in the "International Patents" list.
6. **V. Di Noto**, E. Negro, M. Guarnieri, F. Calzavara, G. Comin, L. Comin, P. Comin. (2008)
   Carica batterie portatile basato su celle a combustibile a direct fuel cell.
   Application number TV2008A000150, filling date 24th November 2008, published as: ITTV20080150 (A1). Applicant: COFI s.r.l. Patent n°0001397993 date of patent 4th February 2013.
   This patent was sold and started up technological transfer to ***Cofi s.r.l.***
7. **V. Di Noto**, E. Negro. (2009)
   Produzione "in situ" di idrogeno tramite processo in splitting di acqua mediato da metalli o da specie inorganiche differenti dal litio e formanti leghe con il sodio.
   Application number PD2009A000040, filling date 10th March 2009, published as: ITPD20090040 (A1). Applicant: University of Padova. Patent n°0001405581 date of patent 17th January 2014.
   This patent was sold and started up technological transfer to ***Cofi s.r.l.***
8. **V. Di Noto**, M. Piga, S. Lavina, E. Negro, G. Pace. (2009)
   Cella per misurare spettri elettrici di materiali in condizioni controllate di pressione, temperatura e temperatura di Dew Point (DPT).

Application number PD2009A000041, filling date 10th March 2009, published as: ITPD20090041 (A1). Applicant: University of Padova. Utility model n.0000275671 entitled *"Apparato per misurare spettri elettrici di materiali in condizioni controllate di pressione, temperatura e temperatura di dew point"* date of patent 17th May 2013.

9. **V. Di Noto**, E. Negro, S. Bongiovanni, A. Bongiovanni, E. Bongiovanni, M. Cagliari. (2009)
   Elettrolizzatore a cella "nucleo-guscio" con nucleo a base di materiali dielettrici a bassa permittività.
   Application number PD2009A000394, filling date 28th December 2009, published as: ITPD20090394 (A1). Applicants: University of Padova and Strumenti Scientifici Cinel s.r.l. Patent n°0001397254 date of patent 4th January 2013.
   This patent has been internationally extended: patent n° 5 in the "International Patents" list.
10. **V. Di Noto**, N. Boaretto, E. Negro, M. Guarnieri, A. Stella. (2010)
    Membrane ibride inorganico - organiche a scambio protonico a base di PFTE e nanofiller a carattere acido per applicazioni in celle a combustibile ad elettrolita polimerico ed elettrolizzatori.
    Application number PD2010A000189, filling date 17th June 2010, published as: ITPD20100189 (A1). Applicant: University of Padova. Patent n°0001411028 date of patent 3rd October 2014.
11. **V. Di Noto**, N. Boaretto, E. Negro, M. Bettiol, F. Bassetto. (2010)
    Membrane ibride contenenti biossido di titanio drogato con fluoro.
    Application number TV2010A000115, filling date 9th August 2010, published as: ITTV20100115 (A1). Applicants: University of Padova and Breton S.p.A. Patent n°0001401383 date of patent 18th July 2013.
    This patent has been internationally extended: patent n° 6 in the "International Patents" list.
12. **V. Di Noto**, F. Bertasi, E. Negro, M. Piga, M. Bettiol, F. Bassetto. (2011)
    Elettroliti di stato solido a base di ossidi di metalli drogati con fluoro.
    Application number TV2011A000104, filling date 21st July 2011, published as: ITTV20110104 (A1). Applicants: University of Padova and Breton S.p.A. Patent n°0001406957 date of patent 14th March 2014.
    This patent has been internationally extended: patent n° 7 in the "International Patents" list.
13. **V. Di Noto**, E. Negro, K. Vezzù, F. Bertasi, G. Nawn, L. Toncelli, S. Zeggio, F. Bassetto (2015)
    Electrocatalysts on carbon nitride matrices.
    Patent application 102015000055603 filling date 28 September 2015. Applicants: Università degli Studi di Padova and Breton S.p.A.
14. **V. Di Noto**, E. Negro, A. Bach Delpeuch, F. Bertasi, G. Pagot, K. Vezzù. (2017)
    Graphene and other 2D materials as layered "shells" supported on "core" nanoparticle carriers.
    Patent application 102017000000211 filed on 02 January 2017. Applicants: Università degli Studi di Padova and Breton S.p.A.
15. **V. Di Noto**, K. Vezzù, C. Sun, L. Meda, C. Gambaro. (2019).
    Zipped ion-exchange membrane.
    Patent application 102019000013734 filed on 1 August 2019. Applicant: ENI S.p.A.
16. **V. Di Noto**, E. Negro, A. Nale, Y. H. Bang, K. Vezzù, G. Pagot, L. Toncelli, S. Zeggio, F. Bassetto, M. Casarin. (2019)
    Method and plant to activate catalysts
    Patent application 102019000018008 filed on 4 October 2019. Applicant: Breton S.p.A.
17. **V. Di Noto**, E. Negro, A. Nale, Y. H. Bang, K. Vezzù, G. Pagot. (2019)
    New membrane-electrode assemblies (MEAs) and methods for their fabrication.
    Patent application 102019000018182 filed on 8 October 2019. Applicant: Breton S.p.A.

3.2. International Patents (13)

1. **V. Di Noto**, G. Valeri. (2000)
   Polymeric material with antistatic properties and method for obtaining it.
   Application number PCT/IT00/00005, filling date 5th January 2000, published as: WO0040647 (A1), AU2128200 (A), CA2360006 (A1), EP1173504 (A1), HRP20010563 (A2), US7109258 (B1). Prior publication date: 7th January 1999, concerning the patent application FE1999A000001. Applicants: Renzo Albertini, Cryvet s.r.l., Domenico Bombardini, Armando Artuso, Vito Di Noto, Gualtiero Valeri. Patent US7109258 (B1) date of patent 19th September 2006.
   This patent was sold and started up technological transfer to Cryvet s.r.l.
2. **V. Di Noto**, M. Fauri. (2000)

Magnesium-based primary (non-rechargeable) and secondary (rechargeable) batteries.
Application number PCT/EP00/07221, filling date 27th July 2000, published as: WO0109972 (A1), AU6278000 (A), CA2380509 (A1), CN1365524 (A), EP1205003 (A1), JP2003506832 (A), RU2269841 (C2). Prior publication date: 29th July 1999, concerning the patent application PD1999A000179. Applicant: University of Padova. Patent RU2269841 (C2) date of patent 10th February 2006; patent IN222307 date of patent 25th August 2008.
This patent was sold and started up technological transfer to ENERGIA 21.

3. **V. Di Noto**, E. Negro, S. Lavina, G. Pace. (2007)
Electrocatalysts based on mono/plurimetallic carbon nitrides for polymer electrolyte membrane fuel cells fuelled with hydrogen (PEFC) and methanol (DMFC) and for H_2 electrogenerators.
Application number PCT/IT2007/000278, filling date 17th April 2007, published as: WO2007119260 (A2), WO2007119260 (A3), EP2064765 (A2), US2009111681 (A1), US8158548 (B2), US2012264594 (A1), US8691716 (B2). Prior publication date: 18th April 2006, concerning the patent application PD2006A000141. Applicant: University of Padova. Patent EP07736782.9 date of patent 13th November 2008; patent US8158548 (B2) date of patent 17th April 2012; patent US8691716 (B2) date of patent 8th April 2014.
patent was sold and started up technological transfer to Breton S.p.A. The electrocatalysts produced by this company are commercialized in all the word.
4. **V. Di Noto**, E. Negro. (2009)
Core-shell mono/plurimetallic carbon nitride based electrocatalysts for low-temperature fuel cells (PEMFCs, DMFCs, AFCs and electrolysers).
Application number PCT/IT2009/000278, filling date 22th June 2009, published as: WO2009157033 (A2), WO2009157033 (A3). Prior publication date: 26th June 2008, concerning the patent application PD2008A000188. Applicant: University of Padova.
*This patent was sold and started up technological transfer to **Breton S.p.A.** The electrocatalysts produced by this company are commercialized in all the world.*
5. **V. Di Noto**, E. Negro, S. Bongiovanni, A. Bongiovanni, E. Bongiovanni, M. Cagliari. (2010)
Electrolyser including a "nucleus-shell" cell with a nucleus based on low-permittivity dielectric materials.
Application number PCT/IT2010/000516, filling date 28th December 2010, published as: WO2011080789 (A1), EP2519661 (A1). Prior publication date 28th December 2009, concerning the patent application PD2009A000394. Applicants: University of Padova and Strumenti Scientifici Cinel s.r.l. Patent EP10814714.1 date of patent 26th July 2012.
*This patent was sold and started up technological transfer to **Strumenti Scientifici Cinel s.r.l.** The electrocatalysts produced by this company are commercialized in all the world.*
6. **V. Di Noto**, N. Boaretto, E. Negro, M. Bettiol, F. Bassetto. (2010)
Hybrid membranes containing titanium dioxide doped with fluorine.
Application number PCT/IB2011/053261 filling date 21st July 2011, published as: WO2012017348 (A1), US2013196251 (A1), KR20130098329 (A), ES2493192 (T3), EP2601702 (A1), CN103053059 (A). Prior publication date 9th August 2010, concerning the patent application TV2010A000115. Applicants: University of Padova and Breton S.p.A. Patent EP2601702 (B1) date of patent 25th June 2014.
*This patent was sold and started up technological transfer to **Breton S.p.A.** The electrocatalysts produced by this company are commercialized in all the world.*
7. **V. Di Noto**, F. Bertasi, E. Negro, M. Piga, M. Bettiol, F. Bassetto. (2011)
Solid-state electrolytes based on fluorine-doped oxides
Application number PCT/IB2012/053542 filling date 11th July 2012, published as: WO2013011423 (A1), US2014162137 (A1), JP2014523626 (A), EP2735050 (A1), CN103620854 (A). Prior publication date 21st July 2011, concerning the patent application TV2011A000104. Applicants: University of Padova and Breton S.p.A.
*This patent was sold and started up technological transfer to **Breton S.p.A.** The electrocatalysts produced by this company are commercialized in all the world.*
8. F. Bertasi, C. Hettige, S.G. Greenbaum, M. Vittadello, **V. Di Noto**. (2013)
Ionic liquids as electrolytes for primary and secondary batteries.
Application number 61/900,522, filling date 6th November 2013, published as 067466 US01.
9. **V. Di Noto**, E. Negro, K. Vezzù, F. Bertasi, G. Nawn, L. Toncelli, S. Zeggio, F. Bassetto. (2017)
Electrocatalysts on carbon nitride matrices
Patent application PCT/IB2016/055728 filed on 26 September 2016, published as: WO2107055981 (A1). Priority date 28 September 2015, patent application 102015000055603. Applicant: Breton S.p.A.
10. **V. Di Noto**, E. Negro, A. Bach Delpeuch, F. Bertasi, G. Pagot, K. Vezzù. (2017)

Graphene and other 2D materials as layered "shells" supported on "core" nanoparticle carriers.
Patent application PCT/EP2017/084801 filed on 29 December 2017, published as WO2018/122368 (A1). Priority date 2 January 2017, patent application 102017000000211. Applicants: Università degli Studi di Padova and Breton S.p.A.

11. **V. Di Noto**, M. Fauri, G. Pagot, F. Bertasi, P. Jouin. (2019)
Électrolytes halogénés caténés pour piles hybrids primaires et secondaires à base de métaux divalents et multivalents d'acide de Lewis.
Priority date 3 July 2019, patent application FR1907431. Applicant: Energia 21 s.r.l.
12. **V. Di Noto**, E. Negro, A. Nale, Y. H. Bang, K. Vezzù, G. Pagot. (2019)
New membrane-electrode assemblies (MEAs) and methods for their fabrication.
Patent application PCT/IB2020/059401 filed on 07 October 2020. Priority date 8 October 2019, patent application 102019000018182. Applicant: Breton S.p.A.
13. **V. Di Noto**, E. Negro, A. Nale, Y. H. Bang, K. Vezzù, G. Pagot, L. Toncelli, S. Zeggio, F. Bassetto, M. Casarin. (2019)
Method and plant to activate catalysts.
Patent application PCT/IB2020/059249 filed on 02 October 2020. Priority date 4 October 2019, patent application 102019000018008. Applicant: Breton S.p.A.

4. Papers on proceedings (9)

1. M. Jeyapandian, E. Negro, S. Lavina, G. Pace, S. Thayumanasundaram, **V. Di Noto**.
   New dielectric and semi conducting hybrid inorganic-organic material based on $Zr(O(CH_2)_3CH_3)_4$, glycerol and EMIm TFSI ionic liquid.
   Published on the 11th Asian conference on Solid-State Ionics (ACSSI-11) proceedings, 9th-13rd June 2008, Coimbatore, India, pp. 475-484.
2. S. Thayumanasundaram, E. Negro, S. Lavina, G. Pace, M. Jeyapandian, **V. Di Noto**.
   Synthesis and dielectric studies of $\{Nafion/[(ZrO_2)\cdot(Ta_2O_5)_{0.120}]_{5\%ZrO2}\}$ composite membrane.
   Published on the 11th Asian conference on Solid-State Ionics (ACSSI-11) proceedings, 9th-13rd June 2008, Coimbatore, India, pp. 667-673.
3. **V. Di Noto**, S. Lavina, E. Negro, G. Pace.
   Hybrid inorganic-organic ion conducting polymer electrolytes: synthesis, structure and conductivity mechanism.
   Published on the 11th Asian conference on Solid-State Ionics (ACSSI-11) proceedings, 9th-13rd June 2008, Coimbatore, India, pp. 91-97.
4. **V. Di Noto**, E. Negro, S. Lavina, G. Pace.
   Broadband Dielectric Spectroscopy and conductivity mechanism of Nafion and inorganic-organic Nafion/oxoclusters hybrids.
   Published on the *Preprints of Symposia – American Chemical Society, Division of Fuel Chemistry,* **53**, 646-647 (2008).
5. **V. Di Noto**, S. Lavina, E. Negro, M. Piga, G. Pace.
   Structure and interactions in $[Nafion/(core\text{-}shell\text{-}oxoclusters)_x]$ hybrid proton-conducting membranes: vibrational spectroscopy studies.
   Published on the *Preprints of Symposia – American Chemical Society, Division of Fuel Chemistry,* **53**, 791-792 (2008).
6. **V. Di Noto**, Lavina S., Negro E., Pace G.
   FUEL 113-Structure and interactions in Nafion (R) core-shell oxoclusters hybrid proton-conducting membranes, vibrational spectroscopy studies.
   Published on the: *Abstracts of papers of the American Chemical Society*, **236**, Fuel-113 (2008).
7. **V. Di Noto**, Negro E., Lavina S., Pace G.
   FUEL 43-Broadband dielectric spectroscopy and conductivity mechanism of Nafion (R) and inorganic-organic nafion-oxocluster hybrids
   Published on the: *Abstracts of papers of the American Chemical Society*, **236**, 43-Fuel (2008).
8. **V. Di Noto**, Piga M., Lavina S., Giffin G.A., Negro E.
   Interplay between nanostructure and proton conductivity of Nafion(R)-based nanocomposite membranes.
   Published on the: *Abstracts of papers of the American Chemical Society*, **242**, 198-Fuel (2011).
9. M. Bartoli, N. Comisso, C. Ferrara, C. Gerbaldi, G. Meligrana, M. Musiani, P. Mustarelli, E. Negro, G. Pagot, B. Petrovičova, E. Quartarone, R. Ruffo, S. Santangelo, P. Sgarbossa, C. Tealdi, L. Vazquez-Gomez, K. Vezzù, **V. Di Noto**.
   Che cosa c'è al di là delle batterie al litio-ione? What is Beyond Lithium Ion Batteries?
   La Chimica e l'Industria online **4(2)**, 27-35 (2020), DOI: http://dx.medra.org/10.17374/CI.2020.102.2.27
10. V. Di Noto, K. Vezzù, G. Pagot, E. Negro
    Tavolo tecnico: Dispositivi innovativi per fornitura di ossigeno.
    La Chimica e l'Industria online **4(6)**, 36-40 (2020).

5. Meeting contributions

The meeting contributions are 296, of which:

i. 199 are oral presentations in international symposia, among which 83 are invited: 60 invited, 16 Keynotes and 8 Plenary Lectures;

ii. 24 are oral presentations in national meetings, of which 4 are invited.

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296. **V. Di Noto**, E. Negro, A. Nale, K. Vezzù, G. Pagot, Hierarchical Oxygen Reduction Electrocatalysts with a Low Pt loading comprising a Graphene *"Core"* and a Carbon Nitride *"Shell"*. European Fuel Cell Forum 2021 (EFCF 2021), Lucerne, Switzerland, 29 June – 2 July 2021 (Keynote Presentation).

295. G. Pagot, M. G. Garaga, A. Jadhav, L. F. O'Donnell, K. Vezzù, B. Itin, R. J. Messinger, E. Negro, S. Greenbaum, **V. Di Noto**. Effect of Ion Coordination on the Long-Range Charge Migration Processes in Ionic Liquid-Based Hybrid Al/Mg Batteries, 239th Meeting of the Electrochemical Society, Chicago, Illinois, 30 May – 3 June 2021 (Invited Oral Presentation).

294. A. Nale, G. Pagot, K. Vezzù, E. Negro, P. J. Kulesza, I. Rutkowska, **V. Di Noto**. Interplay between Surface/Porosimetric, Chemical and Electrochemical Characterization of *"Core-Shell"* High-Pt ORR Electrocatalysts, 239th Meeting of the Electrochemical Society, Chicago, Illinois, 30 May – 3 June 2021 (Invited Oral Presentation).

293. K. Vezzù, G. Pagot, E. Negro, **V. Di Noto**. Innovative Olivine Cathodes for High-Voltage and High-Rate Lithium Batteries, 239th Meeting of the Electrochemical Society, Chicago, Illinois, 30 May – 3 June 2021 (Invited Oral Presentation).

292. P. J. Kulesza, K. Zdunek, I. Rutkowska, E. Negro, K. Vezzù, **V. Di Noto**. Chronoculometric Approach to Diagnosis of Oxygen Reduction at Low Pt-Content Electrocatalysts, 239th Meeting of the Electrochemical Society, Chicago, Illinois, 30 May – 3 June 2021 (Invited Oral Presentation).

291. **V. Di Noto**, K. Vezzù, G. Crivellaro, E. Negro, G. Pagot. Hybrid Inorganic-Organic Ion-Exchange Membranes for Electrochemical Applications: Electrical Response and Conductivity Mechanism, 239th Meeting of the Electrochemical Society, Chicago, Illinois, 30 May – 3 June 2021 (Keynote Presentation).

290. E. Negro, **V. Di Noto**, A. Nale, G. Pagot, K. Vezzu, P. Atanassov. How to Expand the Scope of Cyclic Voltammetry with the Thin-Film Rotating (Ring) Disk Electrode to Investigate Oxygen Reduction Reaction Electrocatalysts, 239th Meeting of the Electrochemical Society, Chicago, Illinois, 30 May – 3 June 2021 (Invited Oral Presentation).

289. A. Nale, E. Negro, Y. Herve Bang, K. Vezzù, G. Pagot, G. Pace, **V. Di Noto**. Optimization and Preparation Process Upscaling for Pt-Ni ORR Electrocatalysts on Hierarchical Graphene Supports, Italian Virtual Workshop on Fuel Cells, Online, 16-19 March 2021 (Invited Oral Presentation).

288. **V. Di Noto**, P. J. Kulesza, M. Chatenet, O. Lottin, F. Micoud, S. Zeggio, D. Pullini, The impact of Critical Raw Materials in Electrochemical Energy Storage and Conversion – An Introduction, IWES 2021 - First Italian workshop on energy storage, Online, 24-26 February 2021 (Invited Oral Presentation).

287. J. Epoupa Mengou, C. Gambaro, L. Meda, A. Tacca, **V. Di Noto**, An innovative membrane enhancing redox performance and reducing vanadium Crossover in Redox Flow Batteries, IWES 2021 - First Italian workshop on energy storage, Online, 24-26 February 2021 (Oral Presentation).

286. C. Sun, G. Pace, K. Vezzù, G. Pagot, **V. Di Noto**, Hybrid inorganic-organic proton-conducting membranes based on SPEEK doped with WO_3 nanoparticles for application in vanadium redox flow batteries, IWES 2021 - First Italian workshop on energy storage, Online, 24-26 February 2021 (Oral Presentation).

285. K. Vezzù, G. Pagot, **V. Di Noto**, Lithiated Fluorinated *"Core-Shell"* Nanoparticles as Single Ion-Conducting Electrolytes for Lithium Batteries, IWES 2021 - First Italian workshop on energy storage, Online, 24-26 February 2021 (Oral Presentation).

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284. G. Pagot, **V. Di Noto**, K. Vezzù, A. Nale, E. Negro, G. Pace, A New Glass Forming Electrolyte Based on Lithium Glycerolate, PRIME 2020 Meeting, 238th Meeting of the Electrochemical Society, Honolulu, Hawaii, 4 – 9 October 2020 (Oral Presentation).
283. E. Negro, A. Nale, G. Pagot, K. Vezzù, P. Kulesza, I. Rutkowska, **V. Di Noto**, Interplay between the Physicochemical Properties and the Electrochemical Performance of Hierarchial Electrocatalysts for the ORR Comprising a Graphene-based 'Core' and a Carbon Nitride 'Shell', PRIME 2020 Meeting, 238th Meeting of the Electrochemical Society, Honolulu, Hawaii, 4 – 9 October 2020 (Invited Oral Presentation).
282. K. Vezzù, G. Pagot, E. Negro, **V. Di Noto**, New Ionic Liquids (ILs) for Secondary Batteries: Interplay between Structure, Electrical Response and Conductivity Mechanism, PRIME 2020 Meeting, 238th Meeting of the Electrochemical Society, Honolulu, Hawaii, 4 – 9 October 2020 (Invited Oral Presentation).
281. E. Negro, G. Pagot, K. Vezzù, A. Nale, **V. Di Noto**, Recent Advances in Functional Materials for Ion-Exchange Membrane Fuel Cells (IEMFC)s: Proton- and Anion-Conducting Electrolytes, and Electrocatalysts for the Oxygen Reduction Reaction, Nanoinnovation 2020, Rome, Italy, 15 – 18 September 2020 (Invited Oral Presentation).
280. G. Pagot, **V. Di Noto**, K. Vezzù, E. Negro, A. Nale, Lithium- and Multivalent Metal-Based Systems for Advanced Rechargeable Batteries, Nanoinnovation 2020, Rome, Italy, 15 – 18 September 2020 (Invited Oral Presentation).
279. **V. Di Noto**, E. Negro, A. Nale, K. Vezzù, G. Pagot, Hierarchical *"Core-Shell"* Low-Loading Pt Oxygen Reduction Reaction Electrocatalysts Based on a Graphene *"Core"* and a Carbon Nitride *"Shell"*, 71st Meeting of the International Society of Electrochemistry, Belgrade, Serbia, 30 August – 4 September 2020 (Invited Oral Presentation).
278. G. Pagot, K. Vezzù, A. Nale, E. Negro, M. Fauri, **V. Di Noto**, Iodoaluminate Ionic Liquid Electrolytes for Advanced Multivalent Twin Metals Secondary Batteries, Enerchem-2, Padova, Italy, 12-14 February 2020 (Oral Presentation).
277. A. Nale, E. Negro, Y. H. Bang, K. Vezzù, G. Pagot, **V. Di Noto**, Electrocatalysts with a low Pt Loading for the Oxygen Reduction Reaction Comprising a Hierarchical Graphene-Based "Core" and a Carbon Nitride "Shell", Enerchem-2, Padova, Italy, 12-14 February 2020 (Oral Presentation).
276. F. Brombin, G. Pagot, K. Vezzù, A. Nale, R. Bertoncello, E. Negro, **V. Di Noto**, High-Energy Olivine Doped Cathode Materials for Secondary Lithium Batteries, Enerchem-2, Padova, Italy, 12-14 February 2020 (Poster Presentation).
275. G. Crivellaro, C. Sun, E. Negro, A. Nale, G. Pagot, K. Vezzù, G. Pace, T. A. Zawodzinski, L. Meda, C. Gambaro, **V. Di Noto**, Hybrid Inorganic-Organic Membranes based on [Nafion/$(WO_3)_x$] as Efficient Barrier Toward Vanadium Crossover in RFB, Enerchem-2, Padova, Italy, 12-14 February 2020 (Poster Presentation).
274. **V. Di Noto**, E. Negro, A. Nale, K. Vezzù, G. Pagot, G. Pace, "Pt-free" Electrocatalysts for the Oxygen Reduction Reaction (ORR) Comprising Graphene-Based "Cores" and Metal Carbon Nitride "Shells", TSRC workshop "Platinum Group Metal-free Electrocatalysts: Small Molecules Activation and Conversion", Telluride Science Research Center, Telluride, CO, USA, 21-24 January 2020 (Invited Oral Presentation).

2019

273. **V. Di Noto**, E. Negro, A. Nale, P. J. Kulesza, I. A. Rutkowska, Y. H. Bang, K. Vezzù, G. Pagot, G. Pace, Recent Advances in Electrocatalysts for the Oxygen Reduction Reaction Comprising a Hierarchical Graphene-Based "Core" and a Carbon Nitride "Shell" with a Low Loading of Platinum, 236th Meeting of the Electrochemical Society, Atlanta, USA, 13-17 October 2019 (Invited Oral Presentation).
272. **V. Di Noto**, E. Negro, A. Nale, P.J. Kulesza, I. A. Rutkowska, Y. H. Bang, K. Vezzù, G. Pagot, G. Pace, "Pt-Free" Electrocatalysts for the Oxygen Reduction Reaction (ORR) Comprising Graphene-Based "Cores" and Metal Carbon Nitride "Shells", 236th Meeting of the Electrochemical Society, Atlanta, USA, 13-17 October 2019 (Invited Oral Presentation).
271. A. Nale, E. Negro, Y. H. Bang, K. Vezzù, G. Pagot, G. Pace, S. Polizzi, R. Bertoncello, **V. Di Noto**, Interplay between Activation Processes, Physicochemical Properties and Electrochemical Performance of "Core-Shell" Carbon Nitride Pt-Ni ORR Electrocatalysts

Based on Hierarchical Graphene Supports, 236th Meeting of the Electrochemical Society, Atlanta, USA, 13-17 October 2019 (Oral Presentation).

270. B. Zakrzewska, K. Miecznikowski, B. Dembinska, A. Jablonska, S. Zoladek, I. A. Rutkowska, E. Negro, P. J. Kulesza, and **V. Di Noto**, Heat-Treated Transition Metal Hexacyanometallates As Electrocatalysts for the Oxygen Reduction Reaction, 236th Meeting of the Electrochemical Society, Atlanta, USA, 13-17 October 2019 (Oral Presentation).
269. G. Pagot, K. Vezzù, A. Nale, E. Negro, S. Greenbaum, **V. Di Noto**, Recent Progresses in Ionic Liquid-Based Electrolytes for Hybrid Multivalent Metals Secondary Batteries, 236th Meeting of the Electrochemical Society, Atlanta, USA, 13-17 October 2019 (Oral Presentation).
268. **V. Di Noto**, G. Pagot, M. Bandiera, K. Vezzù, F. Brombin, A. Nale, G. Crivellareo, A. Migliori, R. Bertoncello, V. Morandi, E. Negro, Superior Doped Olivine Cathodes for Fast Charge/Discharge Lithium Batteries, 236th Meeting of the Electrochemical Society, Atlanta, USA, 13-17 October 2019 (Oral Presentation).
267. P. Mustarelli, R. Ruffo, C. Ferrara, C. Gerbaldi, G. Meligrana, S. Santangelo, E. Quartarone, C. Tealdi, L. Vazquez-Gomez, M. Musiani, E. Negro, **V. Di Noto**, Towards sustainable, high-performing, all-solid-state sodium-ion batteries (TRUST), Giornate dell'Elettrochimica Italiana, Padova, Italy, 8-12 September 2019 (Oral Presentation).
266. A. Nale, E. Negro, Y. H. Bang, K. Vezzù, G. Pagot, G. Pace, **V. Di Noto**, Hierarchical *"Core-Shell"* Low-Loading Pt Electrocatalysts for the Oxygen Reduction Reaction Based on a Graphene *"Core"* and a Carbon Nitride *"Shell",* Giornate dell'Elettrochimica Italiana, Padova, Italy, 8-12 September 2019 (Poster).
265. C. Sun, K. Vezzù, G. Pagot, A. Nale, Y. H. Bang, G. Pace, E. Negro, C. Gambaro, L. Meda, T. A. Zawodzinski, **V. Di Noto**, Elucidation of the Interplay Between Vanadium Species and Charge-Discharge Processes in VRFBs by Raman Spectroscopy, Giornate dell'Elettrochimica Italiana, Padova, Italy, 8-12 September 2019 (Poster).
264. C. Sun, E. Negro, K. Vezzù, G. Pagot, G. Cavinato, A. Nale, Y. H. Bang, **V. Di Noto**, Hybrid inorganic-organic proton-conducting membranes based on SPEEK doped with WO_3 nanoparticles for application in vanadium redox flow batteries, Giornate dell'Elettrochimica Italiana, Padova, Italy, 8-12 September 2019 (Poster).
263. F. Brombin, G. Pagot, M. Bandiera, K. Vezzù, A. Migliori, R. Bertoncello, G. Cavinato, E. Negro, V. Morandi, **V. Di Noto**, High Valence Transition Metals Doping of Olivine Cathode for Superior Energy and Fast Cycling Lithium Batteries Giornate dell'Elettrochimica Italiana, Padova, Italy, 8-12 September 2019 (Poster).
262. Y. H. Bang, E. Negro, A. Nale, K. Vezzù, G. Pagot, G. Pace, S. Polizzi, R. Bertoncello, **V. Di Noto**, Interplay between Activation Processes, Physicochemical Properties and Electrochemical Performance of *"Core-Shell"* Carbon Nitride Pt-Ni ORR Electrocatalysts Based on Hierarchical Graphene Supports, Giornate dell'Elettrochimica Italiana, Padova, Italy, 8-12 September 2019 (Poster).
261. **V. Di Noto**, K. Vezzù, E. Negro, G. Pagot, Interplay between Properties, Electrical Response and Conductivity Mechanism in Ion Conducting Materials, Euromat 2019, Stockholm, Sweden, 1-5 September 2019 (Invited Oral Presentation).
260. **V. Di Noto**, K. Vezzù, E. Negro, G. Pagot, Innovative electrolytes for secondary lithium and magnesium batteries, The 20th International Conference on Advanced Batteries, Accumulators, Fuel Cells and Special Electrochemical Technologies, Brno, Czech Republic, 25-28 August 2019 (Invited oral presentation).
259. **V. Di Noto**, Low-loading Pt, Hierarchical *"Core-Shell"* Electrocatalysts for the Oxygen Reduction Reaction Based on a Graphene *"Core"* and a Carbon Nitride *"Shell"*, Graphene 2019 Conference, Rome, Italy, 25-28 June 2019 (Invited Oral Presentation).
258. **V. Di Noto**, G. Pagot, K. Vezzù, A. Nale, E. Negro, High-Voltage, High-Energy and High-Rate Doped Olivine Cathodes for Lithium Batteries. 22nd Meeting of the International Society on Solid State Ionics (SSI-22), PyeongChang, Republic of Korea, 17-21 June 2019 (Invited Presentation).
257. **V. Di Noto**, K. Vezzù, E. Negro, C. Sun, A. Nale, Y. Herve Bang, G. Pagot, G. Pace, Interplay between Properties, Electrical Response and Conductivity Mechanism in Hybrid Inorganic-Organic Ion-Exchange Membranes for Electrochemical Applications, 235th Meeting of the Electrochemical Society, Dallas, USA, 26-30 May 2019 (Keynote Presentation).
256. **V. Di Noto**, E. Negro, A. Nale, Y. Herve Bang, K. Vezzù, G. Pagot, G. Pace, Hierarchical *"Core-Shell"* Low-Loading Pt Electrocatalysts for the Oxygen Reduction Reaction Based on a Graphene *"Core"* and a Carbon Nitride *"Shell"*, 235th Meeting of the Electrochemical Society, Dallas, USA, 26-30 May 2019 (Invited Presentation).

255. K. Vezzù, G. Pagot, E. Negro, A. Nale, Y. Bang, **V. Di Noto**, Lithiated Fluorinated *"Core-Shell"* Nanoparticles As Single-Ion-Conducting Electrolytes for Lithium Batteries, 235th Meeting of the Electrochemical Society, Dallas, USA, 26-30 May 2019 (Keynote Presentation).
254. **V. Di Noto**, Linee di tendenza nello sviluppo di batterie di nuova generazione, Electric Car Safety, Sinergie per una Sicurezza a 360°, Padova, 29 May 2019 (Invited Presentation).
253. **V. Di Noto**, Y. Herve Bang, A. Nale, E. Negro, G. Pace, G. Pagot, K. Vezzù, Hierarchical *«Core-Shell»* Low-loading Pt Electrocatalysts for the Oxygen Reduction Reaction Based on a Graphene *«Core»* and a Carbon Nitride *«Shell»*, 25th Topical Meeting of the International Society of Electrochemistry, Toledo, Spain, 12-15 May 2019 (Invited Oral Presentation).
252. L. Meda, **V. Di Noto**, C. Gambaro, E. Negro, C. Sun, K. Vezzù, Efficient Barrier Towards Vanadium Crossover in Redox Flow Batteries, 25th Topical Meeting of the International Society of Electrochemistry, Toledo, Spain, 12-15 May 2019 (Oral Presentation).

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251. **V. Di Noto**, K. Vezzù, E. Negro, F. Bertasi, G. Pagot, Innovative Polymer Electrolytes for Secondary Lithium and Magnesium Batteries, AiMES 2018, ECS and SMEQ Joint International Meeting, Cancun, Mexico, 30 September – 4 October 2018 (Keynote presentation).
250. **V. Di Noto**, E. Negro, A. Nale, K. Vezzù, Y. Herve Bang, F. Bertasi, G. Pagot, G. Pace, S. Polizzi, M. Prato, "Platinum-Free" ORR Electrocatalysts based on Hierarchical Graphene Supports: Interplay between Physicochemical Features and Electrochemical Performance, AiMES 2018, ECS and SMEQ Joint International Meeting, Cancun, Mexico, 30 September – 4 October 2018 (Oral presentation).
249. G. Pagot, E. Donà, F. Bertasi, K. Vezzù, A. Nale, E. Negro, **V. Di Noto**, Structural and Conductivity Mechanism of a Boron-Based Ionic Liquid Electrolyte for Magnesium Batteries, AiMES 2018, ECS and SMEQ Joint International Meeting, Cancun, Mexico, 30 September – 4 October 2018 (Poster).
248. G. Pagot, F. Bertasi, K. Vezzù, E. Negro, **V. Di Noto**, Recent Advances on Magnesium Batteries Based on Ionic Liquids and δ-$MgCl_2$, 2nd International Symposium on Magnesium Batteries, Ulm, Germany, 27-28 September 2018 (Oral Presentation).
247. **V. Di Noto**, Anion exchange membranes: correlation between physicochemical properties and anion conductivity by broadband electrical spectroscopy, 19th International Cnference on Solid State Protonic Conductors, Stowe, Vermont, USA, 16-21 September 2018 (Keynote).
246. **V. Di Noto**, K. Vezzù, G. Pagot, G. Pace, E. Negro, Y. Abu-Lebdeh, M. Armand, A New Lipophilic Ionic Liquid: Electrical Response and Effect of CO_2 on the Conductivity Mechanism, 6th International Conference on Ionic Liquids for Electrochemical Devices, Rome, Italy, 9-11 September 2018 (Oral Presentation).
245. G. Pagot, K. Vezzù, A. Nale, E. Negro, **V. Di Noto**, A Boron-based Ionic Liquid for Magnesium Batteries: Structure and Conductivity Mechanism, 6th International Conference on Ionic Liquids for Electrochemical Devices, Rome, Italy, 9-11 September 2018 (Oral Presentation).
244. A. Nale, E. Negro, Y. Herve Bang, K. Vezzù, G. Pagot, G. Pace, **V. Di Noto**, Low-Loading Graphene-Based Hierarchical Nanostructured Electrocatalysts in Single PEMFCs: Correlation Between Properties and ORR Performance, XI Congresso Nazionale AICIng – Università di Bologna – Complesso di S. Giovanni in Monte, 9-12 September 2018 (Poster).
243. K. Vezzù, G. Pagot, E. Negro, G. Cavinato, G. Pace, **V. Di Noto**, New Ion-Exchange Membranes Derived from Polyketone (Poster), XI Congresso Nazionale AICIng – Università di Bologna – Complesso di S. Giovanni in Monte, 9-12 September 2018 (Poster).
242. E. Negro, A. Nale, K. Vezzù, Y. Herve Bang, G. Pagot, G. Pace, S. Polizzi, M. Prato, P. J. Kulesza, I. A. Rutkowska, **V. Di Noto**, Interplay between Physicochemical Features and Electrochemical Performance in the ORR of "Platinum-Free" Electrocatalysts based on Hierarchical Graphene Supports, 69th Annual Meeting of the International Society of Electrochemistry, Bologna, Italy, 2-7 September 2018 (Oral Presentation).
241. **V. Di Noto**, K. Vezzù, F. Bertasi, E. Negro, G. Pagot, G. Pace, A. Herring, Broadband Electrical Spetroscopy (BES) to Investigate the Mechanisms of Ion Conduction in Electrolyte Membranes for Low-Temperature Fuel Cells, 69th Annual Meeting of the International Society of Electrochemistry, Bologna, Italy, 2-7 September 2018 (Oral Presentation).
240. L. Meda, C. Gambaro, C. Sun, A. Zlotorowicz, K. Vezzù, E. Negro, **V. Di Noto**, G. Pace, T. A. Zawodzinski, Interplay between State of Charge, Composition of the Feeds and Performance in Vanadium Redox Flow Batteries, 69th Annual Meeting of the International Society of Electrochemistry, Bologna, Italy, 2-7 September 2018 (Oral Presentation).

239. E. Negro, A. Nale, K. Vezzù, Y. Herve Bang, F. Bertasi, G. Pagot, G. Pace, S. Polizzi, M. Prato, **V. Di Noto**, *"Platinum-free"* ORR electrocatalysts based on hierarchical graphene supports: Interplay between physicochemical features and electrochemical performance, International Symposium on Electrocatalysis, Szczyrk, Poland, 29 August – 1 September 2018 (Invited Oral Presentation).
238. **V. Di Noto**, E. Negro, A. Nale, Y. Herve Bang, K. Vezzù, G. Pagot, G. Pace, Electrocatalysts for the ORR including Hierarchical Graphene-based Supports and Comprising a Low Loading of Pt, International Symposium on Electrocatalysis, Szczyrk, Poland, 29 August – 1 September 2018 (Invited Oral Presentation).
237. B. Zakrzewska, K. Miecznikowski, B. Dembinska, S. Zoladek, I.A. Rutkowska, A. Zlotorowicz, J. Zak, E. Negro, P. J. Kulesza, **V. Di Noto**, Reduced-Graphene-Oxide with Transition Metal Hexacyanoferrates as Efficient Electrocatalysts for Oxygen Reduction Reaction in Low-Temperature Fuel Cells, International Symposium on Electrocatalysis, Szczyrk, Poland, 29 August – 1 September 2018 (Poster).
236. **Vito Di Noto**, Keti Vezzù, Enrico Negro, Gioele Pagot, Innovative Polymer Electrolytes for Secondary Lithium and Magnesium Batteries, ISPE16, Yokohama, Japan, 23-29 June 2018. (Invited Keynote Presentation)
235. Gioele Pagot, Edoardo Donà, Federico Bertasi, Keti Vezzù, Angeloclaudio Nale, Enrico Negro, **Vito Di Noto**, Structural and Conductivity Mechanism of a Boron-based Ionic Liquid Electrolyte for Magnesium Batteries, ISPE16, Yokohama, Japan, 23-29 June 2018.
234. **Vito Di Noto**, Graeme Nawn, Keti Vezzù, Federico Bertasi, Enrico Negro, Gianni Cavinato, Giuseppe Pace, New Ion-Exchange Membranes Derived from Polyketone, 233 ECS Meeting, Seattle, WA (USA), 13-17 May
233. **Vito Di Noto**, Enrico Negro, Angeloclaudio Nale, Keti Vezzù, Yannick Bang, Federico Bertasi, Gioele Pagot, Giuseppe Pace, Stefano Polizzi, Mirko Prato, Interplay between Physicochemical Features and Electrochemical Performance in the ORR of "Platinum-Free" Elecrocatalysts Based on Hierarchical Graphene Supports, 233 ECS Meeting, Seattle, WA (USA), 13-17 May 2018. (Invited Presentation)
232. Federico Bertasi, Keti Vezzù, Gioele Pagot, Giuseppe Pace, Enrico Negro, Yaser Abu-Lebdeh, Michel Armand, **Vito Di Noto**, Electrical Response of a New Lipophilic Ionic Liquid and the Effect of CO_2 on Its Conductivity Mechanism, 233 ECS Meeting, Seattle, WA (USA), 13-17 May 2018
231. **Vito Di Noto**, Graeme Nawn, Keti Vezzù, Federico Bertasi, Gioele Pagot, Enrico Negro, and Gianni Cavinato, New ion-exchange membranes derived from polyketone, GEI 2018, Sestriere, 21-24 January 2018 (Oral presentation)
230. Enrico Negro, Angeloclaudio Nale, Keti Vezzù, Federico Bertasi, Graeme Nawn, Agnieszka Zlotorowicz, Yannick Herve Bang, Gioele Pagot, Chuanyu Sun, Giuseppe Pace, **Vito Di Noto**, Hierarchical "core-shell" electrocatalysts for the oxygen reduction reaction (ORR) based on graphene "cores" and metal alloy carbon nitride "shells", GEI 2018, Sestriere, 21-24 January 2018 (Oral presentation)

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229. Krzysztof Miecznikowski, Beata Dembinska, Sylwia Zoladek, Iwona Agnieszka Rutkowska, Enrico Negro, Pawel J Kulesza, **V. Di Noto**, Heat-Treated Transition Metal Hexacyanometallates with Trace Amount of Pt As Electrocatalysts for the Oxygen Reduction Reaction Based on Nitrogen Doped Graphene: Catalysts Development and Electrode Structure Design, 232 ECS Meeting, National Harbor (MD, USA), 1-5 October 2017 (Oral Presentation)
228. Pawel J Kulesza, Beata Dembinska, Sylwia Zoladek, Iwona Agnieszka Rutkowska, Krzysztof Miecznikowski, Enrico Negro, **V. Di Noto**, Reduced-Graphene-Oxide with Traces of Iridium or Gold as Active Support for Pt Catalyst at Low Loading during Oxygen Electroreduction, 232 ECS Meeting, National Harbor (MD, USA), 1-5 October 2017 (Oral Presentation)
227. Federico Bertasi, Akiko Tsurumaki, Gioele Pagot, Keti Vezzù, Maria Assunta Navarra, **V. Di Noto**, Conductivity and Dielectric Relaxations in New Morpholinium- and Piperidinium-Based Ionic Liquids, 232 ECS Meeting, National Harbor (MD, USA), 1-5 October 2017 (Invited Presentation)
226. **V. Di Noto**, Keti Vezzù, Enrico Negro, Federico Bertasi, Graeme Nawn, Andrew M Herring, Anion Exchange Membranes: Correlation between Physicochemical Properties and Anion Conductivity By Broadband Electrical Spectroscopy, 232 ECS Meeting, National Harbor (MD, USA), 1-5 October 2017 (Oral Presentation)
225. Enrico Negro, Angeloclaudio Nale, Yannick Bang, Keti Vezzù, Federico Bertasi, Graeme Nawn, Gioele Pagot, Giuseppe Pace, Stefano Polizzi, Mirko Prato, **V. Di Noto**, ORR Electrocatalysts

with a Low Pt Loading Comprising Hierarchical Graphene-Based Supports, 232 ECS Meeting, National Harbor (MD, USA), 1-5 October 2017 (Oral Presentation)

224. **V. Di Noto**, Keti Vezzù, Enrico Negro, Federico Bertasi, Giuseppe Pace, Conductivity and relaxation phenomena in ion conducting materials by broadband electric spectroscopy, XXVI Congresso Nazionale della Società Chimica Italiana, Paestum (SA), 10-14 settembre 2017 (Oral Presentation)
223. G. Pagot, F. Bertasi, K. Vezzù, G. Nawn, C. Sun, A. Nale, E. Negro, **V. Di Noto**, EMImCl/(TiCl4)1.4/(δ-MgCl2)x Ionic Liquid Electrolyte for Mg-ion Batteries, XXVI Congresso Nazionale della Società Chimica Italiana, Paestum (SA), 10-14 settembre 2017 (Oral Presentation)
222. F. Bertasi, V. Di Noto, Secondary magnesium batteries: an overview on ionic liquid -based electrolytes, XXVI Congresso Nazionale della Società Chimica Italiana, Paestum (SA), 10-14 settembre 2017 (Oral Presentation)
221. P. Mustarelli, F. Invernizzi, M. Patrini, K. Vezzù, **V. Di Noto**, Polyurethane-based Electrostrictive Nanocomposites as High Strain - Low Frequency Mechanical Energy Harvesters, XXVI Congresso Nazionale della Società Chimica Italiana, Paestum (SA), 10-14 settembre 2017 (Oral Presentation)
220. **V. Di Noto**, E. Negro, K. Vezzù, A. Nale, Y. Bang, F. Bertasi, G. Pagot, A. Zlotorowicz, G. Pace, Graphene-based "core-shell" hierarchical nanostructured low-pt electrocatalysts for proton exchange membrane fuel cells, XXVI Congresso Nazionale della Società Chimica Italiana, Paestum (SA), 10-14 settembre 2017 (Oral Presentation)
219. **V. Di Noto**, Hierarchical "Core-Shell" Electrocatalysts for the Oxygen Reduction Reaction (ORR) based on Graphene "Cores" and Metal Alloy Carbon Nitride "Shells", 68th Annual Meeting of the International Society of Electrochemistry, Providence, RI, 27 August - 1 September 2017 (Invited Presentation)
218. Pawel J. Kulesza, Sylwia Zoladek, Iwona A. Rutkowska, Magdalena Blicharska, Krzysztof Miecznikowski, Enrico Negro, **V. Di Noto**, Reduced-graphene-oxide-supported gold nanoparticles as active supports for Pt catalysts during electroreduction of oxygen, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral)
217. Keti Vezzù, Enrico Negro, Federico Bertasi, Graeme Nawn, Gioele Pagot, Angelo Claudio Nale, Yannick Herve Bang, Giuseppe Pace, **V. Di Noto**, Conductivity and Relaxation Phenomena in Proton and Anion Exchange Membranes by Broadband Electric Spectroscopy, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral Presentation)
216. Graeme Nawn, Keti Vezzù, Gianni Cavinato, Giuseppe Pace, **V. Di Noto**, New ion-exchange membranes derived from polyketone, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral Presentation)
215. Enrico Negro, Angeloclaudio Nale, Yannick Herve Bang, Keti Vezzù, Federico Bertasi, Chuanyu Sun, Graeme Nawn, Gioele Pagot, Giuseppe Pace, Stefano Polizzi, **V. Di Noto**, Hierarchical graphene-based low-loading Pt "core-shell" ORR electrocatalysts for proton exchange membrane fuel cells, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral Presentation)
214. Gioele Pagot, Federico Bertasi, Keti Vezzù, Andrea Visentini, **V. Di Noto**, Poly(vinyl alcohol)-based Electrolyte for Lithium Batteries, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral Presentation)
213. Federico Bertasi, Sara Tonello, Gioele Pagot, Keti Vezzù, **V. Di Noto**, A New Glass Forming Electrolyte Based on Lithium Glycerolate, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral Presentation)
212. C. Sun, E. Negro, F. Bertasi, G. Nawn, G. Pagot, Y. Bang, A. Nale, K. Vezzù, G. Pace, **V. Di Noto**, Nafion-WO_3 and SPEEK-WO_3 hybrid membranes for Vanadium Redox Flow Batteries, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Poster)
211. Yannick Herve Bang, Angeloclaudio Nale, Enrico Negro, Keti Vezzù, Federico Bertasi, Chuanyu Sun, Graeme Nawn, Gioele Pagot, Giuseppe Pace, **V. Di Noto**, Correlation between properties and ORR performance of low-loading graphene-based hierarchical nanostructured electrocatalysts in single PEMFCs, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Poster)
210. Angeloclaudio Nale, Enrico Negro, Yannick Herve Bang, Keti Vezzù, Federico Bertasi, Chuanyu Sun, Graeme Nawn, Gioele Pagot, Giuseppe Pace, Stefano Polizzi, **V. Di Noto**, Hierarchical graphene-supported PtNix, AuNix and FeSnx "core-shell" carbon nitride

electrocatalysts for the oxygen reduction reaction, 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Poster)

209. Narges Ataollahi, Fabrizio Girardi, Keti Vezzù, **V. Di Noto**, Paolo Scardi, Emanuela Callone, Sandra Dire, Rosa Di Maggio, Properties of Anion Exchange Membrane Based on Polyamine: Effect of Functionalized Silica Particles Prepared by Sol–gel Method. 21st International Conference on Solid State Ionics, Padova, Italy, 18th – 23rd June 2017 (Oral Presentation)
208. **V. Di Noto**, Keti Vezzù, Enrico Negro, Federico Bertasi, Gioele Pagot, Giuseppe Pace, Mechanisms in Ion Conducting Polymer Materials by Broadband Electric Spectroscopy (BES), 231st ECS Meeting, New Orleans, LA (USA), May 28-June 1, 2017 (Keynote Presentation)
207. **V. Di Noto**, Enrico Negro, Keti Vezzù, Angeloclaudio Nale, Yannick Herve Bang, Federico Bertasi, Graeme Nawn, Gioele Pagot, Mirko Prato, Stefano Polizzi, Graphene-based "Core-Shell" Hierarchical Nanostructured Low-Pt Electrocatalysts for Proton Exchange Membrane Fuel Cells, 231st ECS Meeting, New Orleans, LA (USA), May 28-June 1, 2017 (Oral Presentation)
206. **V. Di Noto**, Ionic conductivity in polymers: Interplay between structure, relaxations and conductivity mechanisms, EPF 8th Summer School, 14-19 May 2017 (Invited lecture)

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205. **V. Di Noto**, E. Negro, A. Bach Delpeuch, K Vezzù, F. Bertasi, G. Nawn, G. Pace, A. Ansaldo, M. Prato, M. Colombo, V. Pellegrini, F. Bonaccorso, Graphene-supported Fe, Co, Ni carbon nitride electrocatalysts for the ORR in alkaline environment, The 8th German-Italian-Japanese Meeting of Electrochemists, Kazusa Arc, Chiba, Japan, 2-4 December 2016 (Invited Presentation)
204. **V.Di Noto**, Ionic Liquid-Based Electrolytes for Secondary Mg Batteries, The 8th German-Italian-Japanese Meeting of Electrochemists, Kazusa Arc, Chiba, Japan, 2-4 December 2016 (Invited Presentation)
203. Andrew M Herring, E. Bryan Coughlin, Mathew W. Liberatorre, Tara P Pandey, Himanshu N Sarode, Ye Liu, **V. Di Noto**, Keti Vezzù, The Implications of Cation Clustering in Anion Exchange Membranes on Conductivity and Mechanical Properties, 230th ECS Meeting (PRiME 2016), Honolulu, Hawaii, 2-7 October, 2016. (Oral Presentation)
202. Krzysztof Miecznikowski, Beata Dembinska, Sylwia Zoladek, Iwona Agnieszka Rutkowska, Magdalena Skunik-Nuckowska, Enrico Negro, Pawel J Kulesza, **V. Di Noto**, Non-Precious Metal Electrocatalysts for the Oxygen Reduction Reaction Based on Nitrogen Doped Graphene: Catalysts Development and Electrode Structure Design, 230th ECS Meeting (PRiME 2016), Honolulu, Hawaii, 2-7 October, 2016. (Oral Presentation)
201. G. Nawn, G. Cavinato, G. Pace, K. Vezzù, F. Bertasi, E. Negro, A. Bach Delpeuch, **V. Di Noto**. N-Functionalised Polyketone Ion Exchange Membranes for AEMFCs, 230th ECS Meeting (PRiME 2016), Honolulu, Hawaii, 2-7 October, 2016. (Oral Presentation)
200. E. Negro, A. Bach Delpeuch, K. Vezzù, F. Bertasi, G. Nawn, G. Pagot, Y. Bang, F. Bonaccorso, **V. Di Noto**, Hierarchical "Core-Shell" Pt-Ni ORR Electrocatalysts Based on Graphene "Cores" and Carbon Nitride "Shells". 230th ECS Meeting (PRiME 2016), Honolulu, Hawaii, 2-7 October, 2016. (Oral Presentation)
199. F. Bertasi,G. Pagot, K. Vezzù, E. Negro, G. Pace, **V. Di Noto.** A New Pyrrolidinium-based Electrolyte for Secondary Magnesium Batteries. 230th ECS Meeting (PRiME 2016), Honolulu, Hawaii, 2-7 October, 2016 (Oral Presentation)
198. F. Bertasi, G. Pagot, E. Negro, F. Sepehr, S.J. Paddison, **V. Di Noto**. 3D-Catenated $[EMImCl/(TiCl_4)_{1.4}]/(\delta\text{-}MgCl_2)_x$ Ionic Liquid Electrolyte for Mg Secondary Batteries. 230th ECS Meeting (PRiME 2016), Honolulu, Hawaii, 2-7 October, 2016. (Invited Presentation)
197. **V. Di Noto**, Federico Bertasi, Keti Vezzù, Enrico Negro, Gioele Pagot, Ionic Liquid -Based Electrolytes for Secondary Mg, 2nd Graz Magnesium Battery, Graz, Austria, 27 – 28 September 2016 (Invited Presentation)
196. K. Vezzù, G. Nawn, E. Negro, F. Bertasi, G. Pace, A. Bach Delpeuch, G. Pagot, Y. Bang, C. Sun, **V. Di Noto**, Nanocomposite Membranes Based on PBI and ZrO_2 for HT-PEMFCs. 10th National Conference on Chemistry of Engineering (AICIng), Udine (Italy) 11-14 September 2016. (Poster)
195. C. Sun, A. Bach Delpeuch, E. Negro, F. Bertasi, G. Nawn, G. Pagot, Y. Bang, K. Vezzù, G. Pace, **V. Di Noto**. Cycling Study of a High Performance Vanadium Redox Flow Battery,10th National Conference on Chemistry of Engineering (AICIng), Udine (Italy) 11-14 September 2016 (Poster)
194. G. Pagot, F. Bertasi, G. Nawn, K. Vezzù, E. Negro, A. Bach Delpeuch, C. Sun, **V. Di Noto**, Effects of Ni/Co Doping on the Properties of LiFeαNiβCoγPO4 Cathodes for Lithium Batteries,

10th National Conference on Chemistry of Engineering (AICIng), Udine (Italy) 11-14 September 2016 (Poster)

193. Enrico Negro, **V. Di Noto**, Keti Vezzù, Oxygen reduction reaction carbon-nitride based nano-electrocatalysts for proton-exchange membrane fuel cells, 10th National Conference on Chemistry of Engineering (AICIng), Udine (Italy) 11-14 September 2016 (Oral presentation)
192. K. Vezzù, G. Nawn, E. Negro, F. Bertasi, G. Pace, A. Bach Delpeuch, G. Pagot, Y. Bang, C. Sun, **V. Di Noto**, Conductivity and Relaxation Phenomena in Ion Conducting Materials by Broadband Electric Spectroscopy. 10th National Conference on Chemistry of Engineering (AICIng), Udine (Italy) 11-14 September 2016. (Oral Presentation)
191. A. Bach Delpeuch, E. Negro, F. Bertasi, G. Nawn, G. Pagot, C. Sun, Y. Bang, K. Vezzù, **V. Di Noto**, Novel graphene-supported bimetallic Pt-Ni, Au-Ni and Fe-Sn CN-electrocatalysts for the oxygen reduction reaction, 10th National Conference on Chemistry of Engineering (AICIng), Udine (Italy) 11-14 September 2016. (Poster)
190. F. Bertasi, **V. Di Noto**. Advanced Materials for High-Performance Secondary Li and Mg Batteries (Award Winner Presentation)Giornate dell'Elettrochimica Italiana (GEI), Gargnano (BS, ITA), 11-14 September 2016.
189. **V. Di Noto**, E. Negro, A. Bach Delpeuch, K. Vezzù , F. Bertasi, G. Nawn, G. Pace, A. Ansaldo, M. Prato, M. Colombo, V. Pellegrini, F. Bonaccorso, V. Di Noto. Graphene-Supported Fe, Co, Ni Carbon Nitride Electrocatalysts for the ORR in Alkaline Environment. Giornate dell'Elettrochimica Italiana (GEI), Gargnano (BS, ITA), 11-14 September 2016 (Oral Presentation)
188. M. Popall, N. Boaretto, A. Bittner, K. Vezzù, V. Di Noto, G. Sextl. Ionrganic-organic hybrid materials and their niche in energy storage applications. ISPE XV, Uppsala, Sweden, 15th – 19th August 2016. (Invited Oral presentaion)
187. G. Nawn, G. Cavinato, G. Pace, K. Vezzù, F. Bertasi, G. Pagot, E. Negro, **V. Di Noto**. Anion Exchange Membranes based on Functionalized Polyketone. ISPE XV, Uppsala, Sweden, 15th – 19th August 2016. (Poster)
186. **V. Di Noto**, K. Vezzù, E. Negro, F. Bertasi, A. Bach Delpeuch, G. nawn, G. Paggot, C. Sun, Y. Bang, G. Pace. Conductivity and Relaxation Phenomena in Proton and Anion Exchange Membranes by Broadband Electric Spectroscopy, ISPE XV, Uppsala, Sweden, 15th – 19th August 2016. (Keynotes)

185. **V. Di Noto**, F. Bertasi, K. Vezzù, E. Negro, G. Pagot. Ionic Liquid-Based Electrolytes for Secondary Mg batteries. 1st International Symposium on Mg Batteries, Ulm, Germany, 21th - 22th June 2016. (Invited Oral)
185. F. Bertasi, G. Pagot, S. Tonello, K. Vezzù, E. Negro, V. Di Noto. Ionic Liquids as electrolytes for Mg/I_2 Batteries. 5th International Conference on Ionic Liquids for Electrochemical Devices (ILED5), Rome, Italy, 11 July - 13 July 2016. (Oral Presentation)
184. **V. Di Noto**, Ionic Liquid-Based Electrolytes for Secondary Mg batteries. ILED 2016, Rome, Italy, 11th-13th June 2016. (Invited Oral)
183. **V. Di Noto**, E. Negro, A. Bach Delpeuch, K Vezzù, F. Bertasi, G. Nawn, G. Pace, A. Ansaldo, M. Prato, M. Colombo, V. Pellegrini, F. Bonaccorso. Graphene-supported Fe, Co, Ni carbon nitride electrocatalysts for the ORR in alkaline environment. Graphene Week 2016, Warsaw, Poland, 13th – 17th June 2016. (Oral presentation)
182. E. Negro, A. Bach Delpeuch, K. Vezzù, F. Bertasi, G. Nawn, G. Pace, A. Ansaldo, M. Prato, M. Colombo, V. Pellegrini, F. Bonaccorso, **V. Di Noto**. Graphene-Supported Fe, Co, Ni Carbon Nitride Electrocatalysts for the ORR in Alkaline Environment. 229th ECS Meeting, San Diego, California (USA), 29th May – 2nd June 2016. (Oral Presentation)
181. A. M. Herring, **V. Di Noto**, K. Vezzù, H. Sarode. The Use of Broadband Electric Spectroscopy to Probe the Relaxations and Polarizations in Phase Seperated Polymer Electrolytes. 229th ECS Meeting, San Diego, California (USA), 29th May – 2nd June 2016. (Invited Oral Presentation)
180. F. Sepehr, F. Bertasi, **V. Di Noto**, S. J. Paddison. Haloaluminate Ionic Liquid Based Electrolytes for Secondary Magnesium Batteries: Ab-Initio and Experimental Vibrational Analysis. 229th ECS Meeting, San Diego, California (USA), 29th May – 2nd June 2016. (Oral Presentation)
179. F. Bertasi, F. Conti, J. Wacker, W. Lehnert, C. Korte, **V. Di Noto**. Phase Diagram Approach to Study Acid and Water Uptake of Polybenzimidazole -Type Membranes for Fuel Cells. 229th ECS Meeting, San Diego, California (USA), 29th May – 2nd June 2016. (Poster)
178. G. Pagot, F. Bertasi, G. Nawn, A. Bach Delpeuch, E. Negro, S. Tonello, R. Rigato, S. Polizzi, **V. Di Noto**. Effects of Ni/Co Doping on the Properties of $LiFe_aNi_bCo_cPO_4$ High-Performance

Olivine Cathodes for Lithium Batteries. 229th ECS Meeting, San Diego, California (USA), 29th May – 2nd June 2016. (Oral Presentation)

177. **V. Di Noto**. Conductivity and Relaxation Phenomena in Ion Conducting Materials By Broadband Electric Spectroscopy. 229th ECS Meeting, San Diego, California (USA), 29th May – 2nd June 2016. (Invited Oral Presentation: **tutorial**)
176. V. Di Noto, Graphene-supported Fe, Co, Ni carbon nitride electrocatalysts for the ORR in alkaline environment, 2nd Sino-Italian Workshop on Graphene and Related 2D Materials, Genova, Italy, 23-24 April 2016 (Invited Oral presentation)
175. G. Pagot, F. Bertasi, G. Pace, K. Vezzù, E. Negro, A. Bach Delpeuch, G. Nawn, **V. Di Noto**. Hydrothermal Synthesis of Vanadium Sulfate supported on Graphene Oxide as Novel Cathode for Magnesium Ion Batteries. Graphene 2016, Genoa, Italy, 19th – 22th April 2016. (Poster)
174. **V. Di Noto**, E. Negro, A. Bach Delpeuch, K Vezzù, F. Bertasi, G. Nawn, G. Pace, A. Ansaldo, M. Prato, M. Colombo, V. Pellegrini, F. Bonaccorso. Graphene-supported Fe, Co, Ni carbon nitride electrocatalysts for the ORR in alkaline environment. Graphene 2016, Genoa, Italy, 19th – 22th April 2016. (Invited Oral Presentation: 30min)
173. F. Bertasi, G. Pagot, K. Vezzù, E. Negro, G. Nawn, A. Bach Delpeuch, R. Rigato, S. Tonello, G. Pace, **V. Di Noto**. A Rechargeable magnesium battery based on chloroaluminate ionic liquids (Poster). 1st Enerchem Congress, Firenze, Italy, 18-20 February 2016.
172. E. Negro, A. Bach Delpeuch, K. Vezzù, F. Bertasi, G. Nawn, G. Pagot, C. Sun, Y. Herve Bang, G. Pace, V. Di Noto. Carbon nitride-based oxygen reduction reaction nano-electrocatalysts for PEM fuel cells. ENERCHEM-1, Florence, Italy, 18th – 20th February 2016 (Poster)
171. G. Pagot, F. Bertasi, G. Nawn, E. Negro, G. Pace, S. Polizzi, **V. Di Noto**. Effects of Ni/Co doping on the properties of $LiFe_aNi_bCo_cPO_4$ cathodes for lithium batteries. 1st Enerchem Congress, Firenze, Italy, 18-20 February 2016. (Poster)
170. K. Vezzù, G. Nawn, E. Negro, F. Bertasi, G. Pace, A. Bach Delpeuch, G. Pagot, Y. Herve Bang, C. Sun, V. Di Noto. Nanocomposite Membranes Based on PBI and ZrO_2 for HT-PEMFCs. ENERCHEM-1, Florence, Italy, 18th – 20th February 2016 (Poster)
169. V. Di Noto, E. Negro, K. Vezzù, F. Bertasi, G. Pace, G. Nawn, A. Bach Delpeuch, G. Pagot, Y. Herve Bang, C. Sun. New Materials for Electrochemical Energy Conversions and Storage. ENERCHEM-1, Florence, Italy, 18th – 20th February 2016 (Oral Presentation)

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168. **V. Di Noto**, E. Negro, K. Vezzù, A. Bach Delpeuch, G. Pace, F. Bertasi, G. Nawn. Oxygen reduction reaction electrocatalysts based on carbon nitride "shells" supported on "cores" of conducting nanoparticles. Advances in Materials and Processing Technologies (AMPT), Madrid, Spain, 14th – 17th December 2015 (Invited KeyNote)
167. L. Dos Santos, Jun Woo Park, R. Wycisk, P.N. Pintauro, G. Nawn, K. Vezzù, E. Negro, F. Bertasi, **V. Di Noto**. Membranes from Blended Ionomer/PVDF Nanofibers: I. PFSA/PVDF and PFIA/PVDF Fiber Spinning and Membrane Fabrication. 228th ECS Meeting of Electrochemistry Society, Phoenix (AZ, USA), 11th – 15th October 2015. (Oral presentation)
166. A. Bach Delpeuch, E. Negro, K. Vezzù, G. Nawn, F. Bertasi, G. Pagot, **V. Di Noto**. Graphene-Supported 'Core-Shell' Carbon Nitride Fe- and Sn-Based Electrocatalysts for the Oxygen Reduction Reaction (ORR). 228th ECS Meeting of Electrochemistry Society, Phoenix (AZ, USA), 11th – 15th October 2015. (Oral presentation)
165. G. Nawn, K. Vezzù, E. Negro, F. Bertasi, **V. Di Noto**, L. Dos Santos, J.-W. Park, R. Wycisk, P.N. Pintauro. Membranes from Blended Ionomer/PVDF Nanofibers: II. Interplay Between Properties and Electric Response Solid Electrolytes. 228th ECS Meeting of Electrochemistry Society, Phoenix (AZ, USA), 11th – 15th October 2015. (Oral presentation)
164. **V. Di Noto**. "Core -Shell" ORR Nano-Electrocatalysts Based on a PtNi Carbon Nitride "Shell" and Conducting NP "Core". GEI 2015, Bertinoro, Italy, 20th – 24th September 2015. (Oral Presentation).
163. R. Bertani, P. Sgarbossa, **V. Di Noto**, G. Resnati, G. Terraneo, P. Metrangolo, K. Vezzù, S. Lavina. Supramolecular Platinum-Alkynyl Architectures: Engineering and Dielectric Properties. 21st ISFC & ISoFT '15, Como (Italy), 23th – 28th August 2015. (Poster)
162. **V. Di Noto**, E. Negro, K. Vezzù, A. Bach Delpeuch, F. Bertasi, G. Nawn. "Core-shell" carbon nitride electrocatalysts for the oxygen reduction reaction (ORR) based on graphene and related materials for application in low-temperature fuel cells. GRAPHENE WEEK 2015, Manchester (UK), 22nd – 26th June 2015.
161. E. Negro, **V. Di Noto**, K. Vezzù. Oxygen reduction reaction carbon-nitride based nano-electrocatalysts for proton-exchange membrane fuel cells. AICIng, Rome (Italy), 22nd – 23rd June 2015.

160. **V. Di Noto**, G. Nawn, K. Vezzu, F. Bertasi, E. Negro, S. Lavina, A. Maes, A. Herring, S.Piril Ertem, B. E. Coughlin. Interplay between Relaxations and Structure in Anion-Exchange Membranes (AEMs). 20th International Conference on Solid State Ionics, Keystone (CO, USA), 14th-19th June 2015. (Oral presentation)
159. A. M. Herring, **V. Di Noto**. Understanding Polymer Ion Clustering and Its Implications for Fast Ion Transport in Polymer Electrolyte Membranes. 227th ECS Meeting of Electrochemistry Society, Chicago (Illinois) 24th – 28th May 2015. (Oral presentation)
158. N. Boaretto, C. Brinkmann, K. Vezzù, **V. Di Noto**, H. Lorrmann. Hybrid Polymer Electrolytes Based on Linear Siloxane Networks and Crosslinked Polyether Domains: Interplay Between Composition and Properties. 227th ECS Meeting of Electrochemistry Society, Chicago (Illinois) 24th – 28th May 2015. (Oral presentation)
157. F. Sepehr, F. Bertasi, S. J. Paddison, **V. Di Noto**. Interplay Between Vibrational Modes and Relaxations in Electrolytes for Secondary Magnesium Batteries Based on Haloaluminate Ionic Liquids. 227th ECS Meeting of Electrochemistry Society, Chicago (Illinois) 24th – 28th May 2015. (Oral presentation)
156. **V. Di Noto**, E. Negro, K. Vezzù, G. Nawn, F. Bertasi, A. Serov, K. Artyushkova, P. Atanassov. New Transition Metal-CN ORR Electrocatalysts with a ' Core-Shell' Structure. 227th ECS Meeting of Electrochemistry Society, Chicago (Illinois) 24th – 28th May 2015. (invited oral presentation)
155. F. Bertasi, K. Vezzù, E. Negro, G. Pagot, G. Nawn, J. He, S. J. Paddison, **V. Di Noto**. A New Iodoaluminate Ionic Liquid for Secondary Magnesium Batteries. 227th ECS Meeting of Electrochemistry Society, Chicago (Illinois) 24th – 28th May 2015. (Oral presentation)
154. **V. Di Noto**. Structure and Relaxations in Ion Conducting Polymers for Energy Devices. Advances in Polymers for Fuel Cells and Energy Devices, Asilomar, Pacific Grove (CA), 8th – 11th Febrary 2015. (invited oral presentation)

2014

153. **V. Di Noto**. Hybrid Electrolytes for secondary Li and Mg batteries. Workshop on interfaces in batteries. Ulm (Germany), 20th-21st November 2014. (invited oral presentation).
152. H. N. Sarode, M. A. Vandiver, Y. Liu, A. Maes, T. P. Pandey, S. P. Ertem, T. Tsai, B. Zhang, D. Herbst, G. Linberg, Y. L. S. Tse, S. Seifert, **V. Di Noto**, E. B. Coughlin, Y. Yan, G. Voth, T. Witten, D. M. Knauss, M. W. Liberatore, A. M. Herring. Thin Robust Anion Exchange Membranes for Fuel Cell Applications. 226th ECS Meeting of Electrochemistry Society, Cancun, Messico, 5th – 9th October 2014. (oral presentation)
151. F. Bertasi, E. Negro, K. Vezzù, **V. Di Noto**. Lithiated Fluorinated TiO-NPs Doped with Imidazolium ILs As Electrolytes for Lithium Batteries. 26th ECS Meeting of Electrochemistry Society, Cancun, Messico, 5th – 9th October 2014. (oral presentation)
150. **V. Di Noto**, E. Negro, K. Vezzù, F. Bertasi. "Core-Shell" ORR Nano-Electrocatalysts Based on a PtNi Carbon Nitride "Shell" and Cu NP "Core". 226th ECS Meeting of Electrochemistry Society, Cancun, Messico, 5th – 9th October 2014. (invited oral presentation: Plenary Lecture, Distinguished speaker)
149. **V. Di Noto**. Charge transfer mechanisms in ion conducting materials by broadband electrical spectroscopy (BES). ISPE-14, Geelong, Australia, 24th-29th August 2014. (invited oral presentation: Plenary lecture)
148. M. Guarnieri, P. Alotto, E. Negro, **V. Di Noto**. A stochastic way to understand fuel cell materials. 7th GIJME 2014, Padova, Italy, 14th-16th June 2014. (Oral presentation)
147. S. Lavina, E. Negro, Bryan E. Coughlin, A. M. Herring, G. Pace, K. Vezzù, G. Nawn, **V. Di Noto**. Electric response of anion-conducting membranes. 7th GIJME 2014, Padova, Italy, 14th-16th June 2014. (Oral presentation)
146. E. Negro, K. Vezzù, S. Lavina, G. Pace, **V. Di Noto**, Alloy-Carbon Nitride “core-shells” ORR Electrocatalysts. 7th GIJME 2014, Padova, Italy, 14-16 June2014. (Oral presentation)
145. **V. Di Noto**, F. Bertasi, K. Vezzù, E. Negro, S. Lavina, G. Pace, G. Nawn, G. Pagot. Electrolytes for secondary Li and Mg batteries. 7th GIJME 2014, Padova, Italy, 14th-16th June 2014.
144. F. Bertasi, C. Hettige, K. Vezzù, E. Negro, M. Vittadello, **V. Di Noto**. High-Performing Electrolytes for Secondary Magnesium Batteries Based on Emimcl, $AlCl_3$, and δ-$MgCl_2$ IMBL, Como, Italy, 10th-14th June 2014. (Poster).
143. **V. Di Noto**, F. Bertasi, E. Negro, K. Vezzù, S. Greenbaum, F. Bassetto, S. Zeggio. A Solid-State Single-Ion Conductor for Lithium Batteries Based on Anionic Nanoparticles of Fluorinated Titania. IMBL, Como, Italy, 10th-14th June 2014. (Poster).

142. P. Alotto, E. Negro, **V. Di Noto**,M. Guarnieri. Numerical methods for understanding polymer fuel cell operation. BIT's 3rd Annual World Congress of Advanced Materials – 2014, Chongqing (China), 6th – 8th June 2014. (invited oral presentation)
141. F. Bertasi, G. Pagot, E. Negro, K. Vezzù, **V. Di Noto**. Imidazolium-bsed Ionic Liquids as Electrolytes for rechargeable Magnesium Batteries. ILED2014, Rome, Italy, 28th-30th May 2014. (Poster)
140. **V. Di Noto**, F. Bertasi, K. Vezzù, E. Negro, S. Lavina, G. Pace. Single-ion nanocomposite polymer electrolytes for secondary Li and Mg batteries based on EMImCl, $AlCl_3$ and δ-$MgCl_2$. ILED2014, Rome, Italy, 28th-30th May 2014. (invited oral presentation)
139. F. Bertasi, C. Hettige, M. Vittadello, S. J. Paddison, S. Greenbaum, **V. Di Noto**. Interplay Between Structure and Conductivity in Imidazolium-based Ionic Liquids as Electrolytes for Magnesium Batteries. 225th ECS, Orlando, USA, 11st-16th May 2014. (Oral presentation)
138. **V. Di Noto**, J. Rivetti, F. Bertasi, E. Negro, K. Vezzù, S. Lavina, Nanocomposite Membranes Based on PBI and ZrO_2 for HT-PEMFCs. 225th ECS, Orlando, USA, 11st-16th May 2014. (invited oral presentation: Plenary)
137. F. Sepehr, F. Bertasi, **V. Di Noto**, S.J. Paddison. Ab Initio Study and Vibrational Spectroscopy of Imidazolium Based Ionic Liquids with Dissolved δ-$MgCl_2$. 225th ECS, Orlando, USA, 11st-16th May 2014. (Oral presentation)
136. J. He, **V. Di Noto**, S. Paddison. The Structure of Water-Methanol Mixtures Under an Electric Field: Ab Initio Molecular Dynamics Simulations. 225th ECS, Orlando, USA, 11st-16th May 2014. (Oral presentation)
135. P. Alotto, E. Negro, **V. Di Noto**, M. Guarnieri. Stochastic Methods for PEMFC Parameter Identification. 225th ECS, Orlando, USA, 11st-16th May 2014. (Oral presentation).
134. A. M. Maes, D. Herbst, S. P. Ertem, W. Zhang, **V. Di Noto**, T. Witten, E. B. Coughlin, A. M. Herring. Anion Exchange Membranes with Tuned Ionic Conductivity. 225th ECS, Orlando, USA, 11st-16th May 2014. (Oral presentation).
133. A. Herring, M. Liberatore, D. Knauss, B. Coughlin, T. Witten, G. Voth, Y. Yan, **V. Di Noto**. Anion Exchange Membranes from the Ground Up. MRS 2014, San Francisco, USA, 21st-25th April 2014. (Oral presentation)
132. **V. Di Noto**, J. Rivetti, E. Negro, F. Bertasi, K. Vezzù. Hybrid inorganic-organic nanocomposite membranes for HT-PEMFCs based on PBI and HfO_2: Preparation, characterization and study of electrical properties and conduction mechanism. MRS 2014, San Francisco, USA, 21st-25th April 2014. (invited oral presentation: KeyNote).
131. **V. Di Noto**, F. Bertasi, K. Vezzù, E. Negro, S. Lavina, G. Pace. Single-ion nanocomposite polymer electrolytes for secondary Li and Mg batteries based on EMImCl, $AlCl_3$ and δ-$MgCl_2$. ACS 2014, Dallas, USA, 16th-20th March 2014. (invited oral presentation: Plenary)

2013

130. **V. Di Noto**, E. Negro, K. Vezzù, S. Lavina, G. Pace, Synthesis and characterization of hybrid inorganic-organic proton conducting membranes for PEMFCs. EFC13, Roma (Italia), 11th – 13th December 2013. (Oral presentation)
129. **V. Di Noto**, E. Negro, K. Vezzù, S. Lavina, G. Pace, An innovative family of electrocatalysts for the oxygen reduction reaction (ORR): plurimetallic alloy nanoparticles embedded in carbon nitride "shells" supported on conducting nanostructured "cores". EFC13, Roma (Italia), 11th – 13th December 2013. (Oral presentation)
128. **V. Di Noto**. Charge transfer mechanisms in Anionic Membranes by Broadband Electric Spectroscopy. 7th Bishop Lodge Workshop: Materials for Energy Conversion (Alkaline Membrane Fuel cell), Santa Fe, USA, 3rd-5th November 2013. (invited oral presentation)
127. A.E. Maes, S. Lavina, E B. Coughlin, **V. Di Noto**, A.M. Herring. Using Broadband Electric Spectroscopy to Study Transport in Anion Exchange Membranes. 224th ECS meeting ECS, San Francisco, USA. October 27th – November 1st, 2013. (Oral presentation)
126. F. Bertasi, E. Negro, K. Vezzù, S. Lavina, G.Pace, **V. Di Noto**. Electrolytes for Mg-secondary batteries based on EMImCl ionic liquid, $AlCl_3$ and δ-$MgCl_2$. 224th ECS meeting ECS, San Francisco, USA. October 27th – November 1st, 2013. (Oral presentation)
125. **V. Di Noto**, A. Maes, S. Lavina, E. Negro, B.E. Coughlin, A.M. Herring, G.Pace. Broadband electrical spectroscopy (BES) studies on hydroxide-conducting membranes. 224th ECS meeting ECS, San Francisco, USA. October 27 – November 1, 2013. (invited oral presentation)
124. **V. Di Noto**, E. Negro, K. Vezzù, S. Lavina, G. Pace. An innovative family of electrocatalysts for the oxygen reduction reaction (ORR): plurimetallic alloy nanoparticles embedded in carbon nitride "shells" supported on conducting nanostructured "cores". GEI 2013, Pavia, Italia, 22nd – 27th September 2013. (invited oral presentation)

123. R. Bertani, P. Sgarbossa, **V. Di Noto**, M. Piga, G. Giffin, G. Terraneo, T. Pilati, P. Metrangolo, G. Resnati. New Hybrid Organic-Organometallic Nano-ribbons. Past, Present and Future of Crystallography@Politecnico di Milano, Milan, Italy, 6th-7th June 2013.
122. **V. Di Noto**. Broadband electric spectroscopy: a powerful tool for the determination of charge transfer mechanisms in ion conductors. Symposium on Ionic Materials, JAIST, Japan, 14th – 15th March 2013. (invited oral presentation)
121. **V. Di Noto**, E. Negro, S. Lavina, K. Vezzù, G. Pace. Hybrid inorganic-organic proton conducting membranes for PEMFCs: synthesis, properties and relaxations. 223rd ECS Meeting, Toronto (Canada), 12th-16th May 2013. (Oral presentation).
120. F. Bertasi, E. Negro, S. Lavina, K. Vezzù, F. Bassetto, M. Bettiol, S. G. Greenbaum, **V. Di Noto**. Nanocomposite Li-conducting polymer electrolytes based on PEG400 and lithiated fluorinated iron oxide NPs. 223rd ECS Meeting, Toronto (Canada), 12th-16th May 2013. (Oral presentation: Keynote)
119. **V. Di Noto**, E. Negro, K. Vezzù, S. Lavina, G. Pace. Plurimetallic alloys bonded in carbon nitride "shells" supported on "cores" of conducting nanoparticles as electrocatalysts for the oxygen reduction reaction (ORR). 223rd ECS Meeting, Toronto (Canada), 12th-16th May 2013. (Oral presentation)
118. A.M. Maes, T.-H. Tsai, **V. Di Noto**, A.M. Herring. Investigation of Ion and Water Transport in Block and Random poly(vinyl benzyl trimethylamine), poly(methylbutyline) Copolymers. 223rd ECS Meeting, Toronto (Canada), 12th-16th May 2013. (Oral presentation).

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117. G.A. Giffin, G.M. Haugen, S.J. Hamrock, **V. Di Noto**. Interplay between the structure and relaxations in 3M PFSA proton conducting membranes. 222nd ECS Meeting (PRIME), Honolulu, Hawaii, 7th – 12th October, 2012. (Oral presentation)
116. **V. Di Noto**, F. Bertasi, E. Negro, S. Lavina. Magnesium Electrolyte Based on $EMImBF_4$ and δ-$[MgCl_2]_n$ for Secondary Magnesium Batteries. 222nd ECS Meeting (PRIME), Honolulu, Hawaii, 7th – 12th October, 2012. (Oral presentation)
115. F. Conti, A. Majerus, **V. Di Noto**, C. Korte, W. Lehnert, D. Stolten. Diagnostic Raman signals of the interaction polybenzimidazole – phosphoric acid in membrane for Fuel Cells. GDCh, Gesellschaft Deutscher Chemiker - Electrochemistry 2012, Muenchen, Germany, 17th-19th September, 2012. (Oral presentation).
114. V. Di Noto. Broadband electric spectroscopy: a powerful tool for the determination of charge transfer mechanisms in ion conductors. SSPC16 Solid State Proton Conductors, Grenoble, Francia, 10th- 14th September 2012. (invited oral presentation: Keynote)
113. V. Di Noto. Development of Plurimetallic nano-electrocatalysts based on carbon nitride supports for ORR processes in PEM fuel cells. XL Congresso nazionale della Divisione di Chimica Inorganica della Società Chimica Italiana, Sestri Levante, Italia, 9th -13th September 2012. (invited oral presentation)
112. S. Kitajima, **V. Di Noto**, Y. Tominaga. Dielectric Relaxation Behavior of Polyether/Clay Composites in High-Pressure Carbon Dioxide. ISPE-13, XIII International Symposium on Polymer Electrolytes, Selfoss, Iceland, 26th-31th August, 2012. (Poster)
111. K. Vezzù, F. Bertasi, M. Piccolo, P. Alotto, M. Guarnieri, **V. Di Noto**. A new GHz Broadband Electric Spectrometer (BES) for the measurement of relaxations in PEG400/δ-$[MgCl_2]_n$ polymer electrolytes. ISPE-13, XIII International Symposium on Polymer Electrolytes, Selfoss, Iceland, 26th-31th August, 2012. (Poster)
110. **V. Di Noto**, K. Vezzù, E. Negro, S. Polizzi,G. Cavinato, L. Toniolo. Morphology and Electrochemical Investigations on Multimetal Carbon Nitride Electrocatalysts Supported on Graphitized Polyketone Nanoballs. ISPE-13, XIII International Symposium on Polymer Electrolytes, Selfoss, Iceland, 26th-31th August, 2012. (Oral presentation)
109. **V. Di Noto**, M. Piga, G. Giffin, K. Vezzù, E. Negro. Hybrid inorganic-organic proton conducting membranes for PEMFCs. ISPE XIII 26th-31th August 2012 Selfoss, Islanda. (invited oral presentation: Plenary)
108. F. Bertasi, T. Nosach, P. Sideris, S. Greenbaum, **V. Di Noto**. A single ion-conducting polymer electrolyte based on PEO and anionic nanoparticles: electrical and NMR characterization. ISPE-13, XIII International Symposium on Polymer Electrolytes, Selfoss, Iceland, 26th-31th August, 2012. (Poster)
107. F. Bertasi, G. Giffin, E. Negro, K. Vezzù, F. Basseto, M. Bettiol, S. Greenbaum, **V. Di Noto**. Synthesis, structure and properties of Lithium Single Ion-Conducting Polymer Electrolytes

based on PEG 400 and anionic nanoparticles. ISPE-13, XIII International Symposium on Polymer Electrolytes, Selfoss, Iceland, 26th-31th August, 2012. (Oral presentation)

106. F. Conti, A. Majerus, S. Willbold, **V. Di Noto**, S. Lavina, G. A. Giffin, S. Mammi, C. Korte, W. Lehnert, D. Stolten. Raman and NMR study of the interaction Polybenzimidazole – Phosphoric acid in membranes for fuel cells. ISPE-13, XIII International Symposium on Polymer Electrolytes, Selfoss, Iceland, 26th-31th August, 2012. (Oral presentation)
105. F. Conti, A. Majerus, S. Willbold, S. Mammi, **V. Di Noto**, C. Korte, W. Lehnert, D. Stolten. Spectroscopic Investigation of Acid Doped Polybenzimidazole as Electrolyte Membrane for Fuel Cells. 63rd Annual Meeting of the International Society of Electrochemistry, Prague, Czech Republic, 19th – 24th August, 2012. (Oral presentation)
104. **V. Di Noto**. Interplay between Conductivity and Relaxation Phenomena in Ion-Conducting Materials by Broadband Electrical Spectroscopy. Gordon Conference, Rhode Island (USA), 5th-10th August 2012. (invited oral presentation: Plenary)
103. **V. Di Noto**. Plurimetallic Nano-electrocatalysts based on Carbon Nitride Supports for the ORR Processes in PEM Fuel Cells. 6th Japanese-Italian-German Meeting, Neu-Ulm, Germany, 4th – 7th July 2012. (invited oral presentation)
102. S. Todros, C. Venturato, **V. Di Noto**, A.N. Natali. Characterization of mechanical and chemical properties of biopolymers. Congresso Nazionale di Bioingegneria 2012, Roma, Italia, 27th – 29th June 2012. (Poster)
101. **V. Di Noto**, E. Negro, G. Giffin, G. Pace, S. Lavina. Broadband electric spectroscopy of sulfonated polyetherether ketone and polybenzimidazole-based proton-conducting materials. ILED 2012, Roma, Italia, 30th May- 1st June 2012. (invited oral presentation).
100. F. Bertasi, G. Giffin, E. Negro,K. Vezzù, **V. Di Noto**. Broadband Electric Spectroscopy of triethylammonium-methanesulfonate and triethylammonium-perfluorobutanesulfonate Ionic Liquids. ILED 2012, Roma, Italia, 30th May- 1st June 2012. (Poster)
99. V. Di Noto, M. Piga, G. Giffin, E. Negro, K. Vezzù. Broadband Electric Spectroscopy for the study of the Conduction mechanism of Proton-Conducting Membranes. E-MRS Spring meeting, Strasburgo, Francia, 14th-18th May 2012. (invited oral presentation)
98. **V. Di Noto**, E. Negro, K. Vezzù,G. Giffin. Interplay Between the Preparation Parameters and the ORR Performance of "Core-Shell" Carbon Nitride Nano-Electrocatalysts Bearing Bimetal Pt/Co Active Sites. 221st ECS Meeting, Seattle, Washington, USA, 6th-10th May 2012. (invited oral presentation: Keynote)

2011

97. **V. Di Noto**, M. Piga, E. Negro, G.A. Giffin, S. Lavina. New hybrid inorganic-organic proton conducting membranes based on Nafion and a $[(ZrO_2)\cdot(Ta_2O_5)_{0.119}]$ oxide core-shell nanofiller. 2011 MRS Fall Meeting & Exhibit Materials Research Boston, MA, USA, November 28th - December 2nd, 2011. (invited oral presentation: Keynote)
96. **V. Di Noto**. Development of Plurimetallic Nano-electrocatalysts based on Carbon Nitride Supports for the ORR. Processes in PEM Fuel Cells. Sendai, Japan, 24th-26th October 2011. (Oral presentation)
95. **V. Di Noto**, E. Negro, S. Polizzi, G. Cavinato, K. Vezzù. Interplay between the Morphology, Structure and Electrochemical Performance of a New Family of Plurimetal Carbon Nitride Electrocatalysts Supported on Graphitized Polymeric Nanoswabs. 220 th ECS Meeting, Boston, USA, 9th-14th October 2011. (Oral presentation).
94. **V. Di Noto**, M. Piga, E. Negro, G. A. Giffin, G. Pace, S. Lavina. Broadband Electric Spectroscopy of Sulfonated Polyetherether Ketone and Polybenzimidazole-Based Proton-Conducting Materials. 220 th ECS Meeting, Boston, USA, 9th-14th October 2011. (Oral presentation)
93. **V. Di Noto**, E. Negro. Nano-electrocatalysts based on Carbon Nitride Supports for the ORR and FOR in PEM Fuel Cells. 12th International Conference Advanced batteries, accumulators and Fuel Cells, Brno, 11th -14th September 2011. (invited oral presentation: Keynote)
92. **V. Di Noto**, M. Piga, S. Lavina, G. A. Giffin, E. Negro. Interplay between nanostructure and proton conductivity of Nafion-based nanocomposite membranes. 242nd Meeting of the American Chemical Society, Denver, USA, 28th August-1st September 2011. (Oral presentation: Plenary)
91. **V. Di Noto**, E. Negro, K. Vezzù, G. Pace, S. Polizzi, G. Capurso. A new class of carbon nitride based electrocatalysts for PEMFCs supported on nickel nanoparticles. 5th International Conference on Polymer Batteries and Fuel Cells (PBFC-5), Argonne National Laboratories, USA, 1st-5th August 2011. (invited oral presentation).

90. **V. Di Noto**, M. Piga, G.A. Giffin, S. Lavina, E.S. Smotkin, J.Y. Sanchez, C. Iojoiu. Effect of the anion on the properties of proton-conducting membranes based on neutralized Nafion 117®, Triethylammonium methanesulfonate and Triethylammonium perfluorobutanesulfonate. 1st International Workshop on Long life membranes based on PFSA & SAPs: Preparation and Characterization,Grottaferrata, Italy, 17th-18th March 2011. (Oral presentation)

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89. **V. Di Noto**, E. Negro. Nano-electrocatalysts based on Carbon Nitride Supports for the ORR and FOR in PEM Fuel Cells. 4th Santa Fe Workshop on Materials for Energy Conversion: Catalysts for Ethanol Oxidation end Electro-oxidation. Santa Fe, USA, 4th-6th November 2010. (invited oral presentation)
88. **V. Di Noto**. Development of Plurimetallic Nano-electrocatalysts based on Carbon Nitride Supports for the ORR Processes in PEM Fuel Cells. 5th Japanese-Italian-German Meeting, Sendai, Japan, 24th-26th October 2010. (invited oral presentation)
87. **V. Di Noto**. Advanced High-performing Nanostructured Materials for Proton Electrolyte Membrane Fuel Cells. AICIng 2010, Bressanone, Italy, 5th-8th September 2010. (invited oral presentation)
86. M. Vittadello, K. Yoshida, **V. Di Noto**, T. Furukawa. Dielecteic and conductivity spectroscopy of Li-ion conducting ORMOCERS-APE Networks based on Zr and Al nodes. XII ISPE, Padova, Italy, 29th August- 3rd September 2010. (Poster)
85. Moro F.; A. Luzio; **V. Di Noto**; E. Negro; M. Guarnieri. In-situ estimation of the crossover diffusivity of Direct Methanol Fuel Cells. XII ISPE, Padova, Italy, 29th August- 3rd September 2010. (Poster)
84. **V. Di Noto**, M. Bettiol, F. Bassetto, N. Boaretto, E. Negro, S. Lavina, F. Bertasi. Hybrid Inorganic-Organic Nanocomposite Polymer Electrolytes based on Nafion and Fluorinated TiO2 for PEMFCs. XII ISPE, Padova, Italy, 29th August- 3rd September 2010. (Poster)
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