

Enrico SAVIO

Professor, Ph.D.

Address

Università degli Studi di Padova
Dipartimento di Ingegneria Industriale (DII)
via Venezia 1, I-35131 Padova (ITALY)

Tel. +39 049 827 6814

E-mail enrico.savio@unipd.it

[Personal homepage](#)

[Research group homepage](#)



Education

2000: Ph.D. in Industrial Manufacturing Engineering with dissertation on “Traceability of freeform measurements on coordinate measuring machines”, University of Parma (Italy).

1996: M.Sc. in Management and Industrial Engineering (cum Laude), University of Padua (Italy).

Awards

F.W. Taylor Medal from CIRP (International Academy for Production Engineering), 2003.

Research activity

Research activity is in the area of Precision Manufacturing, with a focus on Manufacturing Metrology. Research topics include on-machine and in-process metrology, advanced coordinate metrology, calibration and verification procedures for coordinate measuring systems, metrology of freeform surfaces and complex parts, nanometrology of surfaces and microparts, and economics of measurements in industry. He is author of five patent applications and of more than 180 publications in international journals or proceedings of international conferences.

Within the Precision Manufacturing research group (<https://research.dii.unipd.it/tecn>) he is responsible for the Laboratory of Industrial and Geometrical Metrology, which has a world-class reputation for research in advanced coordinate metrology, including in-process metrology, computed tomography and metrology of freeform shapes and additive manufactured parts.

Responsible for contract work with industry, national and international research projects, including:

- Horizon Europe EURAMET “ADAM - Application of Digital-Metrological Twins for emerging measurement technology in advanced manufacturing” (2024-27)
- Horizon Europe EURAMET “DI-VISION - Traceable machine vision systems for digital industrial applications” (2024-27)
- Erasmus+ KA2 “TOPMeas - User-centered training for optical measurements in digitalized manufacturing processes” (2023-26)
- Horizon Europe EURAMET “ViDiT - Trustworthy virtual experiments and digital twins” (2023-26)
- PNRR PE11 “Made in Italy Circolare e Sostenibile (MICS) - Spoke 6 Additive manufacturing as disruptive enabler of the twin transition” (2023-25)
- Erasmus+ KA2 “Train4DiM - Training for Dimensional Metrology in Digital Manufacturing” (2020-23).
- Horizon 2020 EURAMET “EUCoM - Standards for the evaluation of the uncertainty of coordinate measurements in industry” (2018-21).
- Erasmus+ KA2 “PREFAM - European framework for continuous professional development in precision engineering for advanced manufacturing” (2019-22).
- Erasmus+ KA2 “CoMeT - European Training for Coordinate Metrology 4.0” (2016-19).
- Erasmus+ KA2 “WINGS+ - Geometrical Quality Control and Large Scale Metrology in the Aeronautic Industry” (2016-19).

- Erasmus+ KA2 “GPSToolbox - Geometrical Product Specification and Verification as toolbox to meet up-to-date technical requirements” (2015-18).
- EUROSTARS “HOTGAUGE - Measurement of complex and freeform shaped parts at elevated temperature” (2011-14).

Memberships, scientific and editorial service (selected)

- Fellow of CIRP (International Academy for Production Engineering); Chairman of the Scientific Technical Committee “Surfaces” (2016-19).
- President (2019-21) of EUSPEN - European Society for Precision Engineering and Nanotechnology, Board of Directors (2013-22), and Member since 1999.
- Founding member of CMTrain (Training for Coordinate Metrology e.V.) since 2005.
- Associate Editor of Precision Engineering, Journal of the International Societies for Precision Engineering and Nanotechnology (2015-19).
- Associate Editor of CIRP Journal of Manufacturing Science and Technology, since 2020.
- Member of the Scientific Committees of several International Conferences, including: 18th euspen Int. Conference and Exhibition, 4-8 June 2018, Venice, Italy (Chairman and local host).

University service (selected)

- President, Bachelor and Master Degree Courses in Mechanical Engineering, 2013-20.
- Coordinator, Education Committee of the Department of Industrial Engineering, 2014-17.
- Coordinator, Curriculum “Chemical, Materials and Mechanical Engineering”, Doctoral School of Industrial Engineering, 2011-15.
- Responsible for the Laboratory of Industrial and Geometrical Metrology, since 2000.

Selected publications

1. Savio E, De Chiffre L, Schmitt R (2007). Metrology of freeform shaped parts. CIRP ANNALS, vol. 56/2, p. 810-835, ISSN: 0007-8506. Keynote Paper.
2. Carmignato S, Voltan A, Savio E (2010). Metrological performance of optical coordinate measuring machines under industrial conditions. CIRP ANNALS, vol. 59/1, p. 497-500, doi: 10.1016/j.cirp.2010.03.128
3. Carmignato S, Savio E (2011). Traceable volume measurements using coordinate measuring systems. CIRP ANNALS, vol. 60/1, p. 519-522, ISSN: 0007-8506, doi: 10.1016/j.cirp.2011.03.061
4. Savio E (2012). A methodology for the quantification of value-adding by manufacturing metrology. CIRP ANNALS, vol. 61/1, p. 503-506, ISSN: 0007-8506, doi: 10.1016/j.cirp.2012.03.019
5. Savio E, De Chiffre L, Carmignato S, Meinertz J (2016). Economic benefits of metrology in manufacturing. CIRP ANNALS, vol. 65/1, p. 495-498, ISSN: 0007-8506, doi: 10.1016/j.cirp.2016.04.020
6. Carmignato S, Aloisi V, Medeoosi F, Zanini F, Savio E (2017). Influence of surface roughness on computed tomography dimensional measurements. CIRP ANNALS, vol.66/1:499-502, doi: 10.1016/j.cirp.2017.04.067
7. Gao W, Haitjema H, Fang F Z, Leach R K, Cheung C F, Savio E, Linares J M (2019) On-machine and in-process surface metrology for precision manufacturing. CIRP ANNALS, vol. 68/2, p. 843-866, ISSN: 0007-8506, doi: 10.1016/j.cirp.2019.05.005
8. Ghiotti A, Simonetto E, Bruschi S, Savio E (2021) Enhancing the accuracy of in-process springback measurements of complex tube bending processes using cost-effective embedded sensors. Meas. Sci. Technol. 32 064002.
9. Mullany B, Savio E, Haitjema H, Leach R (2022) The implication and evaluation of geometrical imperfections on manufactured surfaces. CIRP ANNALS vol. 71 (2)DOI: 10.1016/j.cirp.2022.05.004
10. Sorgato, M, Brun, P, Savio, E, Lucchetta, G (2023). A process chain for the mass production of nanopatterned bactericidal plastic parts. CIRP ANNALS, vol. 72/1:477-480, doi: 10.1016/j.cirp.2023.04.014
11. Zanini F, Carmignato S, Savio E, (2023) Two different experimental approaches for the uncertainty determination of X-ray computed tomography dimensional measurements on complex additively manufactured parts. CIRP Journal of Manufacturing Science and Technology, Vol.47, Pages 205-214
12. Archenti A., Gao W., Donmez A., Savio E., Irino N. (2024). Integrated metrology for advanced manufacturing. CIRP ANNALS, vol. 73, ISSN: 0007-8506, doi: 10.1016/j.cirp.2024.05.003

[Full list of publications](#)

Padua, December 2024