

# University Academic Curriculum Vitae

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**Personal information**    Pietro Tosato

- Education since leaving school**
- 2012, Bachelor degree in Industrial Engineering (University of Trento)
  - 2015, Master degree in Mechatronics engineering (University of Trento)
  - 2019, Doctorate in Electronics at Materials, Mechatronics and Systems Engineering program (University of Trento)

- Present appointment**
- Electronic Systems
  - September 2024

**Professional experience**

From / to	Job title	Name of academic Institution	Academic level	responsibilities
2019 - present	Research Fellow	Fondazione Bruno Kessler	RTD	Electronics design and integration for custom sensors
2018	Visiting Researcher	Queen's university Belfast	PhD	Develop part of the thesis project
2014	Internship	STMicroelectronics	Intern	Develop a zero-power wake-up system

- Experience in academic teaching**
- Various tutorships at the Industrial Engineering department of the University of Trento
  - Teaching Assistant for the course "Embedded systems" (year 2015-2016 and 2016-2017) at the University of Trento

**Research and scholarships**

- The current research activity includes:
  - Low power electronics
  - Gas sensing technologies and applications
  - Radiation sensors electronics

**Publications**

- Orlando, A., Trentini, G., Tosato, P., Krik, S., Valt, M., Gaiardo, A. and Petti, L. (2024), 'Gas Sensing Capabilities of CuInS<sub>2</sub>/ZnO Core-Shell Quantum Dot', PROCEEDINGS 'Proceedings 2024 XXXV EUROSENSORS Conference', MDPI, Basel.
- Magoni, M., Gaiardo, A., Valt, M., Tosato, P., Fabbri, B. and Guidi, V. (2024), 'Enhancing Ozone Monitoring with Low-Cost Sensors and Deep Neural Network: A Novel Approach', PROCEEDINGS 'Proceedings 2024'.
- Gaiardo, A., Valt, M., Tosato, P., Magoni, M., Guidi, V., Dolci, C. and Bellutti, P. (2024), 'Development and Deployment of Portable Sensor Platforms Based on a Micro-Electro-Mechanical-System Chemoresistive Gas Sensor Array for Outdoor Air Quality Monitoring', PROCEEDINGS 'Proceedings 2024', MDPI, Basel.
- Picchiotti, E. S., Krik, S., Ibba, P., Tosato, P., Altana, A., Valt, M., Gaiardo, A. and Petti, L. (2023), 'Enhancing precision agriculture through cyber-physical systems: a functional monitoring platform

as decision support tool"Proceedings of 2023 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor)'.

- Gottardi, M., Parmesan, L., Tosato, P., Demenev, E., Manuzzato, E. and Gasparini, L. (2023), 'A 500 × 500 Pixel Image Sensor with Arbitrary Number of Rows per Frame and Image Filtering for Center of Mass Estimation'Proceedings of ESSCIRC 2023- IEEE 49th European Solid State Circuits Conference (ESSCIRC)', 97--100.
- Orlando, A., Mushtaq, A., Gaiardo, A., Valt, M., Vanzetti, L., Costa Angeli, M. A., Avancini, E., Shkodra, B., Petrelli, M., Tosato, P., Krik, S., Novel, D., Lugli, P. and Petti, L. (2023), 'The Influence of Surfactants on the Deposition and Performance of Single-Walled Carbon Nanotube-Based Gas Sensors for NO<sub>2</sub> and NH<sub>3</sub> Detection', CHEMOSENSORS 11(2).
- Tosato, P., Facinelli, D., Prada, M., Gemma, L., Rossi, M. and Brunelli, D. (2019), 'An Autonomous Swarm of Drones for Industrial Gas Sensing Applications'Proceedings of 2019 IEEE 20th International Symposium on "A World of Wireless, Mobile and Multimedia Networks" (WoWMoM)'.
- Luiso, M., Macii, D., Tosato, P., Brunelli, D., Gallo, D. and Landi, C. (2018), 'A Low-Voltage Measurement Testbed for Metrological Characterization of Algorithms for Phasor Measurement Units', IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT 67(10), 2420--2433.
- Tosato, P., Macii, D., Luiso, M., Brunelli, D., Gallo, D. and Landi, C. (2018), 'A Tuned Lightweight Estimation Algorithm for Low-Cost Phasor Measurement Units', IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT 67(5).
- Nardello, M., Tosato, P., Rossi, M. and Brunelli, D. (2018), 'A Thermoelectric Powered System for Skiing Performance Monitoring'Applications in Electronics Pervading Industry, Environment and Society (ApplePies 2017)', 135--144.
- Golchin, P., Tosato, P. and Brunelli, D. (2018), 'Wake up for Power Line Communication in Street Lighting Networks'Applications in Electronics Pervading Industry, Environment and Society (ApplePies 2016)', 95--103.
- Rossi, M., Iannaci, A., Tosato, P. and Brunelli, D. (2017), 'Let the microbes power your sensing display'Proceedings of 2017 IEEE SENSORS'.
- Gallo, D., Landi, C., Luiso, M., Tosato, P., Macii, D. and Brunelli, D. (2017), 'A Testbed for the Experimental Characterization of Estimation Algorithms for Phasor Measurement Units'Proceedings of 2017 IEEE International Workshop on Applied Measurements for Power Systems (AMPS)'.
- Tosato, P., Macii, D. and Brunelli, D. (2017), 'Implementation of phasor measurement units on low-cost embedded platforms: A feasibility study'Proceedings of 2017 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)'.
- Rossi, M., Tosato, P., Gemma, L., Torquati, L., Catania, C., Camalo, S. and Brunelli, D. (2017), 'Long range wireless sensing powered by plant-microbial fuel cell'Design, Automation & Test in Europe Conference & Exhibition (DATE)'.
- Piyare, R. K., Murphy, A. L., Tosato, P. and Brunelli, D. (2017), 'Plug into a Plant: Using a Plant Microbial Fuel Cell and a Wake-Up Radio for an Energy Neutral Sensing System.'IEEE 42nd Conference on Local Computer Networks Workshops', IEEE, 18--25.
- Piyare, R. K., Murphy, A. L., Kiraly, C., Pietro, T. and Davide, B. (2017), 'Ultra Low Power Wake-Up Radios: A Hardware and Networking Survey', IEEE COMMUNICATIONS SURVEYS AND TUTORIALS 19(4), 2117--2157.
- Brunelli, D., Tosato, P. and Rossi, M. (2017), 'Microbial fuel cell as

a biosensor and a power source for flora health monitoring"Proceedings of 2016 IEEE SENSORS'.

- Brunelli, D., Tosato, P. and Rossi, M. (2017), 'Flora Monitoring with a Plant-Microbial Fuel Cell'Applications in Electronics Pervading Industry, Environment and Society (ApplePies 2016)', 41--48.
- Brunelli, D., Rossi, M. and Tosato, P. (2017), 'A Radio-Triggered Wireless Sensor Platform Powered by Soil Bacteria', PROCEEDINGS 1(4).
- Brunelli, D., Tosato, P. and Rossi, M. (2016), 'Flora Health Wireless Monitoring with Plant-Microbial Fuel Cell', PROCEDIA ENGINEERING 168'30th Eurosensors Conference, EUROSENSORS 2016', 1646--1650.
- Golchin, P., Tosato, P. and Brunelli, D. (2016), 'Zero-energy wake up for power line communications in smart cities'Proceedings of 2016 IEEE International Smart Cities Conference (ISC2)'.
- Golchin, P., Tosato, P. and Brunelli, D. (2016), 'Design optimization of zero power wake-up receiver in Power line communication'Proceedings of 2016 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM)', 564--569.

**Language  
competence**

Italian  
English

July 18, 2024