

Alessandro Pecora

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PROFESSIONAL EXPERIENCE

September 2001 - Present

Permanent Researcher at the National Research Council (CNR). Matr.5199

Institute for Microelectronics and Microsystems (IMM)– Rome (<http://www.artov.imm.cnr.it/>)

- General Manager of the “NanoMicroFAB” open research Infrastructure.
- Coordinator for Technological Area “Micro/Nano Fabrication” of IMM-CNR-Rome.
- Coordinator for Technology Transfer activities of the CNR research Area of Rome Tor Vergata.
- Member of the strategic committee of the “Promo-TT Instrument”; a CNR-Unioncamere joint project on Technology Transfer sector (<https://dsb.cnr.it/publicevents/promott/>).
- Scientific expert at the Scientific and Technological Cooperation Office of the Italian Ministry of Foreign Affairs and International Cooperation (2014/2015 - 2 years).
- Member of the Scientific Committee of the Italian foundation FORMIT (Foundation for Research on Immigration and Integration of Technologies).
- Scientific coordinator of Industrial regional projects “AgriDroneVision” and “High Power Amplifier” on the sector of Precision Agriculture and Aerospace respectively (2018-19).
- Coordinator for the CNR Flagship Project “Factory Technologies for Humans Safety” in the framework of Factory of the Future National Manufacturing Platform. Project for the design and implementation of robotic systems able to cooperate with human operators in safety.
- Coordinator of the Italy-Canada bilateral cooperation with Natural Sciences and Engineering Research Council of Canada and Automotive Partnership Canada. Project about the Improvement of human-robot cooperation and safety in shared automated workplaces in the automotive industry.
- Local responsible for the regional project “Simpflex” – FILAS CoResearch on the development of a strain sensors system for the control of inflatable composite structures in Aero-space applications.
- Local responsible for the activity in cooperation with the Italian Institute of Technology (Robotics, Brain and Cognitive Sciences Lab) for the development of Electronic Skin for the humanoid robot iCub and the development of Neural and Rehabilitation Systems.
- Participation as a key person in the European project “Corticonic”, FET proactive FP7-ICT-2011-9 for the activity of fabrication of microelectrode array on ultra-flexible polyimide for intracortical recording brain signals from Neural Implants.
- Participation as a key person in the Public-Private Laboratory “Plast_ICs2”, Electronics on Plastic for Systems “Smart disposable” (coordinated by ST-Microelectronics).
- Participation as a key person in the national PRIN project (call 2012) about the development of Capacitive Micromachined Ultrasonic Transducers.
- Member of Steering Board and Scientific Committee of the Public-Private Laboratory “Plast_ICs” (Integrated Circuits on Plastics; funded by MIUR and coordinated by ST-Microelectronics)
- Involved as key person in the European project “FlexiDis” FP6-2003-IST-2 for the development of Flexible Displays.
- Involved in the European project “FLASH” – Fundamentals and applications of laser processing for highly innovative MOS technology.
- Winner of the Canada-Italy Innovation Award 2015 for a project with the Simon Fraser University in the priority area of ICT.
- Scientific responsible of a joint lab with the Department of Electronic Engineering of University of Tor Vergata and of several contracts with SME.

Business or sector: Applied research on smart sensors, flexible micro- and nano-electronics, robotics.

May 1990 – August 2001

Fixed term Researcher at the National Research Council (CNR)

Institute for Photonics and Nanotechnologies – Rome

- Involved in the European project “ESPRIT” – European Consortium Active Matrix III
- Involved in the ENEA - FESR project “FOTO”, development of high performances thin film transistors.
- Involved in the FIRB project “Micropolis” (Microsystems based on polymers).
- Involved in the MADESS I & II projects for the development of electronic devices and sensors based on amorphous silicon.

Sept. 2000 – August 2001

Tenured teacher in Physics at the Secondary School

Professional technical Institute “E. De Amicis” – Rome

EDUCATION AND TRAINING

May 1990 – May 1993

PhD (equiv. CNR grant)

Institute for Photonics and Nanotechnologies – Rome

- Study and fabrication of micro-electronic devices.

October 1981 –February 1990

Master degree in Physics

University of Rome “La Sapienza”, score: 100/110

- Thesis on Surface electron spectroscopy of materials for electronics

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Organisational / managerial skills

- Leadership, good experience in the coordination of research projects and team management.
- He collaborated with several SME: Eniricerche, Sorin Biomedica, General Electric, Philips Research Lab, Thales, STMicroelectronics, SeTeL, etc.
- He organised the Workshop “The future of micro and nano systems”, joint technologies Italy/Israel 27 September 2013, Sala del Refettorio, Palazzo San Macuto, Camera dei Deputati - Roma

Publications To date (January 2018) he published more than 100 papers in peer reviewed international Journals, owns five patents and participated to several international conferences also as invited speaker.
H-index = 24 (Google Scholar).

Selected papers

Chemo-Resistive Gas Sensors Based on PbS Colloidal Quantum Dots
L Maiolo, SA Bruno, I Lucarini, A Pecora, A De Iacovo, L Colace
2018 IEEE SENSORS, 1-4

Integrated steering wheel system based on nanostructured elastomeric sensors for real time detection of driver drowsiness status
F Maita, SA Bruno, A Castiello, M Ruggeri, A Pecora, L Maiolo
SENSORS, 2017 IEEE, 1-3

Optical properties of highly n-doped germanium obtained by in situ doping and laser annealing
J. Frigerio, A. Ballabio, K. Gallacher, V. Gilberti, L. Baldassarre, R. Millar, R. Milazzo, L. Maiolo, A. Minotti, F. Bottegioni, P. Biagioni, D Paul, M. Ortolani, A. Pecora, E. Napolitani, G. Isella, Journal of Physics D: Applied Physics, Vol. 50, n. 46, (2017).

Infrared photo-resistors based on recrystallized amorphous germanium films on flexible substrates
SV Grayli, A Ferrone, L Maiolo, A De Iacovo, A Pecora, L Colace, GW Leach, B Bahreyni, Sensors and Actuators A: Physical, Vol. 263, (2017).

Electronic nose for pesticides detection: A first realization
F Leccese, M Cagnetti, S Giarnetti, S Tuti, I Luisetto, E Petritoli, A Pecora, L Maiolo, R Đurović-Pejčev, T Đorđević, A Tomašević, V Bursić, V Arenella, P Gabriele, E De Francesco, IEEE International Workshop on Metrology for AeroSpace (MetroAeroSpace), 2017.

Schottky Barrier Thin Film Transistor (SB-TFT) on low-temperature polycrystalline silicon
A De Iacovo, A Ferrone, L Colace, A Minotti, L Maiolo, A Pecora, Solid-State Electronics, Vol. 126, Pages 1–4, (2016).

Highly Disordered Array of Silicon Nanowires: an Effective and Scalable Approach for Performing and Flexible Electrochemical Biosensors
L. Maiolo, D. Polese, A. Pecora, G. Fortunato, Y. Shacham-Diamand and A. Convertino, Advanced Healthcare Materials, Vol. 5, Issue 5, pages 575–583, March 9, (2016)

Ultra-flexible Tactile Piezoelectric Sensor Based On Low-temperature Polycrystalline Silicon Thin Film Transistor Technology
Maita F., Maiolo L., Minotti A., Pecora A., Ricci D., Metta G., Scandurra G., Giusi G., Ciofi C., Fortunato, G. IEEE Sensors Journal, Vol. PP, Issue: 99 (2015)

Extraction of Schottky Barrier Parameters for Metal–Semiconductor Junctions on High Resistivity Inhomogeneous, Semiconductors
A De Iacovo, L Colace, G Assanto, L Maiolo, A Pecora
IEEE Transactions on Electron Devices, Vol.62, Issue 2,(2015).

Ultraflexible Tactile Piezoelectric Sensor Based on Low-Temperature Polycrystalline Silicon Thin-Film Transistor Technology
IEEE Sensors Journal, Vol.:15, Issue: 7, pp:3819 - 3826 DOI:10.1109/JSEN.2015.2399531, (2015).

Flexible pH sensors based on polysilicon thin film transistors and ZnO nanowalls
L Maiolo, S Mirabella, F Maita, A Alberti, A Minotti, V Strano, A Pecora, ...
Applied Physics Letters 105 (9), 093501, (2014).

PEDOT-CNT-coated low-impedance, ultra-flexible, and brain-conformable micro-ECOG arrays
E Castagnola, L Maiolo, E Maggolini, A Minotti, M Marrani, F Maita,
IEEE Transactions on Neural Systems and Rehabilitation Engineering, Vol.:PP, Issue: 99, (2014)

LTPS TFT technology on flexible substrates for sensor applications
G Fortunato, L Maiolo, F Maita, A Minotti, S Mirabella, V Strano, G Metta, ...
21st International Workshop on Active-Matrix Flat panel Displays and Devices (AM-FPD), (2014).

Wireless sensor networks and safe protocols for user tracking in human-robot cooperative workspaces
F Vicentini, M Ruggeri, L Dariz, A Pecora, L Maiolo, D Polese, L Pazzini, L. Molinari Tosatti, IEEE 23rd International Symposium on Industrial Electronics (ISIE) (2014).

Strain gauge sensors based on thermoplastic nanocomposite for monitoring inflatable structures
A Pecora, L Maiolo, A Minotti, R De Francesco, E De Francesco, F. Leccese, M. Cagnetti, A. Ferrone
Metrology for Aerospace (MetroAeroSpace), 2014 IEEE, 84-88.

On-chip fabrication of ultrasensitive NO2 sensors based on silicon nanowires
M Cuscunà, A Convertino, E Zampetti, A Macagnano, A Pecora, G. Fortunato, L. Felisari, G. Nicotra, C. Spinella, F. Martelli, Applied Physics Letters 101 (10), 103101, (2012).



Rome, 03 February 2020