

Antonello Vincenzo

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Assistant professor (ricercatore confermato) in the “Scuola di ingegneria industriale e dell’informazione” at Politecnico di Milano
During the years 2000 to 2004, postdoctoral associate (assegnista di ricerca) in the “Dipartimento di Chimica Fisica Applicata” at Politecnico di Milano

Academic qualifications

National academic qualification for associate professor, 09/D1 Scienza e tecnologia dei materiali (January 2014)
Doctoral degree in Electrochemical Engineering (2000)
Master degree in Chemical Engineering (1995)

Research areas

I have been working in the area of electrochemical processing of material, surface engineering, carbon nanomaterials, and electrochemical synthesis in the frame of both academic and industrial research activities. Current research work is focused on the development and characterization of materials for electrochemical technologies. In particular, I am interested in the relationships between material structure and morphology, the resulting electrode behavior and relevant electrochemical mechanisms. Ongoing research activities concern in particular electrode materials for electrochemical energy storage and capacitive deionization, namely: nanocarbon based electrodes for supercapacitors; transition metal oxides for energy storage; intercalation electrodes in CDI. Other research activities concern the use of electrochemical impedance spectroscopy for service life assessment of organic coatings.

Teaching Experience

Politecnico di Milano, Milan, ITALY
Facoltà di Ingegneria dei processi industriali / Industrial Process Engineering School
Materials engineering and nanotechnology (formerly : Materials engineering)

Undergraduate Courses

2010-current : Rivestimenti inorganici (Inorganic coatings, five credits course, 5CC; 7CC from 2014 onwards)
2014-2015 : laboratorio tecnologico progettuale (nanotecnologia e trattamento delle superfici) (5CC)
2013-2014 : teaching assistant, Chimica fisica applicata ai materiali (10 CC)
2005-2009 : teaching assistant, Chimica fisica applicata ai materiali (5CC)
2003-2009 : teaching assistant, Termodinamica dei materiali (5CC)
2000-2003 : teaching assistant, Materiali A+B (10CC)

Graduate Courses

2015-current : Electrochemistry of Materials (5CC) - (course taught in English)

2009-2015 : Applied Electrochemistry (5CC) - (course taught in English)

2008-2010 : Elettrochimica Applicata (5CC)

2003-2009 : Rivestimenti Metallurgici (10CC)

2003-2009 : teaching assistant, Elettrochimica Applicata (5CC)

I am or have been supervisor or co-supervisor on a number of bachelor and master thesis as well as tutor of several PhD thesis, on subjects including:

- synthesis of carbon nanomaterial (CNT and RGO) and their application in electrochemical capacitors
- sodium intercalation oxide for energy storage and for capacitive deionization
- preparation and characterization of semiconductive oxide thin films (tungsten oxide, titanium oxide, zinc oxide)
- preparation and characterization of nanostructured thin film and coating by electrodeposition, including single metal, literally from Ag to Zn, and alloys, e.g. Ni-Fe, Ni-Co, Ni-W, Co-P and Co-W
- development and optimization of electrochemical processes (electrodeposition, electroforming and autocatalytic deposition; anodizing)
- innovative protective coatings
- mechanical properties of thin films and coatings
- electrochemical behavior and service performance of materials
- fundamental studies in electrocrystallization
- fundamental studies in anodic oxide growth
- anodizing of aluminum and titanium and characterization of the anodic oxides (namely: microstructure and mechanical characterization, photoelectrochemical behavior -Ti-)
- electrodeposition of oxides, such as Mn oxides and mixed oxides, such as Mn-Ni and Mn-Co oxide for pseudocapacitors
- hydrothermal synthesis of oxides
- tin whiskers
- process and material characterization in microelectronics applications (chemical-mechanical planarization; testing of ball grid array solder joints; high humidity high temperature testing of tin finish on copper lead-frame)
- thin film and coatings for electrical contacts

Research grants, research contracts and consultancy

Principal researcher in Nanomaterials for Blue Energy: renewable energy from capacitive mixing by using supercapacitors with nanostructured electrodes (NANOBLUE) – Cariplo. Foundation Project 2011.0336 (36 months)

National representative in the European Coordination Action "European Lead-Free Soldering Network ", NMP2-CT-2003-505504 (36 months)

Researcher in ST.I.M.A. STrutture Ibride per la Meccanica e l'Aerospazio" no. 14567 (24 months)

Researcher in PRIN 2005097413_001 - Electrolytic deposition of thin films for magnetic recording (24 months)

Researcher in PRIN 2002098479_001 - Electrodeposition of nanostructured gold and gold alloys (24 months)

I have been working with several private companies in the frame of either research or consultancy contracts over the last ten years, including the following:

ST Microelectronics (1998; 1999-2000); Bracco (2006) ; ENI (2011-2013); ABB (several contracts from 2007 to 2019; contract holder); ROSLER (2012; contract holder); DATALOGIC (2013-2015; contract holder) and other small / medium enterprise.

Other informations

Member of the International Society of Electrochemistry

I have served as a reviewer for a number of journals, in particular: Surface and Coatings Technology, the Journal of the Electrochemical Society, Electrochimica Acta, Journal of Power Sources, etc.

See: <https://publons.com/researcher/883545/antonello-vicenzo/peer-review/>

Publications

<https://re.public.polimi.it/simple-search?query=vicenzo>

<http://orcid.org/0000-0002-7107-4846>

<https://www.mendeley.com/profiles/antonello-vicenzo/>

<http://www.researcherid.com/rid/F-6691-2013>

<https://scholar.google.it/citations?user=ba4wHgIAAAAJ&hl=it>