

Name Chiara Zanardi
Nationality Italian
Current position Associate Professor of Analytical Chemistry, Department of Chemical and Geological Science, University of Modena and Reggio Emilia (MO)

EDUCATION

Ph.D (Chemical Sciences) Jen 2002, University of Modena and Reggio Emilia, Modena, Italy
Mc.S (Industrial Chemistry) Oct 1998, University of Bologna, Bologna, Italy

PROFESSIONAL EXPERIENCE

Nov 2015 – Present. Associate Professor in Analytical Chemistry, Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, Modena, Italy

2017 – present. Associated to Istituto per la Sintesi Organica e Fotoreattività (ISOF) of the Centro Nazionale delle Ricerche (CNR) to work in the frame of Graphene Flagship founded by European Community.

Sep 2002 – Oct 2015. Researcher in Analytical Chemistry, Department of Chemistry, University of Modena and Reggio Emilia, Modena, Italy.

CURRENT RESEARCH INTERESTS

The main research activities are in the development of electrochemical sensors and biosensors for the quantification of meaningful analytes in foodstuffs, environmental matrices and biological fluids. This implies the development of electrode coatings based on innovative materials and suitable to give most valuable information on the matrix studied, with respect to the conventional electrode surfaces

The main materials studied are:

- conducting polymers
- redox polymers
- metal and metal oxide nanoparticles
- carbon-based nanomaterials (graphene oxide, carbon black and carbon nanotubes)

The main applications are:

- (wearable) biosensors for the detection of biomarkers in biological fluids
- sensors for the definition of quality of foodstuffs and beverages
- sensors for drugs of abuse
- pollutants in waste water
- sensors arrays based on blind analysis

COMMISSION OF TRUST and AWARDS

National Scientific Qualification as Full Professor in Analytical Chemistry in 2013 and in Sep 2018.

2020 – Member of PhD commission at the University of Florence (IT)

2017 – Foreign member of PhD commissions at the University of Lincoln (UK)

2014 – Foreign member of PhD commissions at the University of Burgos (Spain)

2017 – Internal member of a PhD commission in Models and Methods for Material and Environmental Sciences

2011 – Internal member of a PhD commission in Science and Technology for the Food Quality and Safety.

2002 - “Young Researcher” Award from the Division of Analytical Chemistry of the Italian Chemical Society.

2000 - “Best thesis” Award from the Division of Electrochemistry of the Italian Chemical Society.

VISITING PERIODS

Nov 2018 – Visiting scientist at the School of Chemistry of the University of Lincoln (UK)

Jul 2012 – Visiting scientist at the Dept. of Analytical Chemistry of the University of Cadiz (ES)

Sep 2010 – Visiting scientist at the Dept. of Chemistry of the University of Burgos (ES)

Feb 2007 – Visiting scientist at the Dept. of Chemistry of the University of Burgos (ES)

Sep 2003 – Visiting scientist at the Dept. of Chemistry of the University of Turku (FIN)

TEACHING ACTIVITY

- For PhD students:

Supervisor of two PhD theses: "Synthesis and characterization of novel nanostructured materials for amperometric sensors" (Fabrizio Poletti 2018-present) and "Electrochemical sensing platforms based on graphene materials" (dr. Giulio Maccaferri, 2014-17).

Member of doctorate schools in Models and Methods for Material and Environmental Sciences (2015-present), Information and Communication Technology (2010-2015) and Food science and technologies (2007- 2009).

- For Bachelor and Master students:

numerous teaching activities in the field of Analytical Chemistry for students of Chemistry, Biotechnology and Biology degrees, and for student of Chemical Science, Industrial Biotechnology, Pharmacy and Pharmaceutical Chemistry and Technology master degrees.

Supervisors of more than 50 theses for Bachelor and Master students of all the above mentioned degrees

Tutor for students in Biotechnology (2009-2011), for students in Pharmaceutical Chemistry and Technology (2014-present) and student in Chemistry (2020-present).

PROFESSIONAL DUTIES

Delegate of the Division of Analytical Chemistry in the "Young group" of the Italian Chemical Society (2002-2003 and (2005-2009).

Responsible of Erasmus exchanges with the Universidad de Burgos (ES), Universidad de Cadiz (ES), Turun Yliopisto (FIN), University of Lincoln (UK) and Universitatea Politehnica din Bucuresti (RO).

Responsible of International Exchanges for the Department of Chemical and Geological Science of the University of Modena and Reggio Emilia, 2015-present.

RESEARCH GRANTS

2020-21 - Galileo Program with the University of Strasburg (FR) 'Development of electrochemical sensors for the monitoring of human health' (PI for the Italian side)

2019-21 - FAR2019 Interdisciplinary 'Novel analytical tools for the determination of cannabinoids in Cannabis sativa L. based products and biological fluids' (PI)

2018-19 - FAR2017 'Development of silica-based amperometric sensors' (PI)

2017- present - "Graphene Flagship" within the Research Unit of ISOF-CNR

2018-20 - Spearhead project 'Multifunctional plaster sensor for human skin, based on functionalized graphene - ChemSens' (Deputy Leader)

2016-17: FAR2015: 'Development of silicate-based materials for sensor applications'

2013-2014 - Seed activity of Nanosystems, materials and emerging systems for sustainable technologies of the Università di Modena e Reggio Emilia 'Development of nanostructured materials for the amperometric sensing' (PI)

2010-11 - PRIN2009 "Electrochemical sensors based on thin films of nanostructured functionalized materials' (PI: prof. R. Seeber - RU: Unimore)

2010-11 - Collaborative European Project "Drugs And PreCursor Sensing By ComplemenTing Low COst Multiple Techniques - CUSTOM' (PI: Selex Italia)

2007: Mobility actions within the scientific and cultural collaboration program of the University of Modena and Reggio Emilia with affiliated foreign universities. Outgoing to the University of Turku (Finland)

2006-07 - PRIN2006 'Development of electrochemical micro- and nanosystems for specific and aspecific analyses in real matrices' (PI: prof. R. Seeber - RU: Unimore)

2002-03: PRIN2002'Electrode systems and innovative electroanalytical methodologies for analysis in real matrices' (PI: prof. Mazzocchin - RU: Unive)

2001-03 - Interuniversity Cooperation Project 'Promotion of a European dimension in chemist training: mobility and integrated training and research programs'. Italy: University of Modena, Pavia, Messina. Foreign partners: Polithenica University of Bucharest (Romania), University of Burgos (Spain), University of Turku (Finland), University of Leiden (The Netherlands).

2001 - Young Researcher Program from Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR) 'Synthesis of thiophene-based metal complexes and electrosynthesis of polymer films'.

PUBLICATIONS

90 papers in ISI peer-reviewed journals, 4 Conference Proceedings with ISBN, 1 book and 2 book chapters
H-index: 26 (Web of Science)
1674 total citations (Web of Science)

REFeree/EVALUATOR ACTIVITY

Co-Editor of a special issue of Sensors (MDPI) 'Recent Advance in Electrochemical Biosensors' in Dec 2021
Co-Editor of a special issue of Sensors (MDPI) 'Nanostructured Surfaces in Sensing Systems' in Dec 2018
Co-Editor of a special issue of Analytical and Bioanalytical Chemistry (Springer) dealing with Amperometric Sensing, (volume 405 – issue 11) in 2013
Co-Editor of a special issue of Sensors dealing with Amperometric Sensing in 2013
Member of the Section board of Sensors (from MDPI) for Biosensors from 2019
Review Editor of Frontier in Chemistry, Analytical Chemistry from 2017
Review Editor of Frontier in Chemistry, Electrochemistry from 2020
Member of the Editorial Board of Analytica (from MDPI) from 2020
Reviewer for several international journals in the field of electroanalysis, electrochemistry, and materials chemistry.
Reviewer for some Italian projects and for one project of the Swiss National Science Foundation

INVITED LESSONS, SEMINARS and LECTURES

Trends in Nanotechnology (TNT 2020), Tirana (Albania), 26-30 Oct 2021.
'Graphene-based electrodes for the detection of biomarkers in sweat', XXVII National Congress of Italian Society of Chemistry, Milano, 14-23 Sep 2021.
'Role of oxidized functional groups in the electrocatalytic properties of carbon-based nanomaterials', 72nd Annual Meeting of the International Society of Electrochemistry, Jeju Island (Korea), 29 Aug - 3 Sep 2021.
'Carbon-based sensors for the monitoring of biomarkers in sweat', 1st International Electronic Conference on Biosensors, 2-17 Nov 2020.
'Graphene-based wearable sensors for the monitoring of biomarkers in sweat'. Graphene for Research, Innovation, Collaboration (G4RIC), Strasbourg (on line congress) 22-24 Sep 2020.
'Multifunctional plaster sensor for human skin, based on functionalized graphene - ChemSens'. Graphene Week, Helsinki (Finland) 23-27 Sep 2019.
'Graphene oxide-based materials for electrochemical (bio)sensing'. 2nd European Conference on Chemistry of two-dimensional materials (Chem2DMat), Dresden (Germany), 03-06 Sep 2019.
'Nanosized materials in electrochemical sensing'. Coffee talk @ ISOF, Bologna (Italy), 12 Mar 2019.
'Nanostructured surface coatings in electrochemical sensing', 1st National School on Chemical Sensors, Naples (Italy) 24-26 May 2017
'Electrocatalytic coatings in amperometric sensing: advantages and criticisms', Keynote of the XXV Congress of Analytical Chemistry, Trieste (Italy) 13-17 Sep 2015
'Electrochemical Sensors and Biosensors', National School of Analytical Chemistry for PhD students, Rome 22-26 Sep 2014
'Conducting Polymers: synthesis and applications as sensors in electrochemistry', University of Burgos (Spagna), Feb 2007
'Au nanoparticles in electroanalysis", Keynote of GS2010, Florence (Italy), Oct 2010.