Sandra Rondinini, “laureata cum laude” in Chemistry in 1975, at the University of Milano (Italy), Senior Researcher in 1980, Associate Professor of Physical Chemistry in 1985, Full Chair qualification (ASN) in Physical Chemistry. She is Member of the Department of Chemistry of the same University, and the Referent for the Laboratory of Applied Electrochemistry.

Her research activity covers the wide spectrum of fundamental and applied electrochemistry, following a naturally developing path along which she has accumulated a rich experience, now mainly devoted to the integrated fields of rationalization of energy sources and environmental remediation and protection.

From her initial studies on the thermodynamics of electrolytic solutions in aqueous, non-aqueous and mixed solvents, she has acquired the tools to move towards the fundamental and applied aspects of ion-exchange membranes and to develop the relevant transport models for the generalization of membrane phenomena. Concomitantly, her theoretical studies were applied to electrolytic membrane processes for recovery of chemicals, drug separation, and water acid electrolysis on one side, and to the development of ion-selective electrodes and biosensors. This wide experience was also transferred to deepen the metrological aspects of the standardization of pH in aqueous, non-aqueous and mixed media, both as experimental research (she was visiting researcher at the Laboratory of Physical Chemistry of Prof. Arthur K. Covington, The University of Newcastle upon Tyne, UK) and international normalization as IUPAC Officer. Between 1979 and 2002, she had an intense activity for IUPAC, starting as National Observer, and becoming Titular Member and then President of the Electroanalyticical Chemistry Commission. In 2002 she was Member of the Working Party of pH, of which she was Co-Chair together Richard P. Buck (University of North Carolina at Chapel Hill, NC, USA), and corresponding Author of the IUPAC Recommendation "Measurement Of pH. Definition, Standards, And Procedures (Iupac Recommendations 2002)", Pure Appl. Chem., 74 (2002) 2169 –2200, by R.P.Buck (Chairman), S.Rondinini (Co-Chair), A.K.Covington, F.G.K.Baucke, C.M.A.Brett, M.F.Camões, M.J.T.Milton, T.Mussini, R.Naumann, K.W.Pratt, P.Spitzer, G.S.Wilson, which has become a milestone in the field. At present, she is Titular Member of the Analytical Chemistry Division for the biennia 2016-17 and 2018-19.

The integrated fundamental and applied approach is evident also in her studies on the electrochemical methodologies for the synthesis and the degradation of organic compounds, studies that are mainly focused on the development of electroreductive processes for the detoxification of wastes and the recovery of, or conversion to, value added substances. Special attention is paid to the optimisation of the process in terms of power consumption and yields, thanks to the development of silver-based electrocatalytic materials for organic halides electroreductions, for which she is an internationally recognised authority. This has promoted her developments in the field of environmental electrochemistry, with her achievements in the detoxification of aqueous and non-aqueous wastes containing polyhalophenols, and polychlorinated methanes and ethanes, also as gaseous effluents. Thanks to her authoritative experience, she has been invited to contribute to: “Electrochemistry for the Environment”, Ch. Comninellis, and G. Chen, (Eds.), Springer, 2010, with the Chapter on “Electroreduction of Halogenated Organic Compounds”, and to the Encyclopedia of Applied Electrochemistry, Gerhard Kreysa, Ken-ichiro Ota, Robert F. Savinell Editors, Springer Science+Business Media New York 2014, with the Chapter on “Organic Pollutants for Wastewater Treatment, Reductive Dechlorination”.

Her experience on the interfacial phenomena, which govern the heterogeneous electron transfer for the silver-substrate systems, has been also applied to other aspects of materials electrochemistry, including the rationalisation of energy sources and the development of electrochemical devices. These up-to-date

themes cover: (i) chemically modified electrodes for sensors end electronics, (ii) nanostructured mixed oxide composite materials for energy conversion (e.g. reversible water electrolysis/fuel cell systems), and (iii) photoelectrocatalytic materials for photoelectrochemical water splitting (PECWS). These studies cover the wide spectrum of both the fundamental aspects, which govern the intrinsic material properties, and the applied aspects, which lead to the final device design and operation. This has also prompted the development of innovative methodologies for the rapid and reliable determination of the key properties. Her most recent research activity includes the combined electrochemical and X-ray absorption spectroscopy methodology for the in-situ and in-operando elucidation of electron and charge transfers in homogeneous and heterogeneous systems.

Grants: Coordinator the Marie Curie Training Site on Electrochemistry and Corrosion Science for the Environment supported by the EC, within FPV "Improving Human Potential", 2002-2006. The Site grouped 14 Professors and Researchers of the Electrochemistry Section of the Department of Physical Chemistry and Electrochemistry of the University of Milano, and offered a wide choice of training activity in all the fields of fundamental and applied electrochemistry, from environmental aspects, to corrosion science, electrocatalysis, electroanalysis, organic electrochemistry, transport phenomena and electrochemical thermodynamics. The Site had a grant of 240,000 € (about 400,000€ today) for 96-person-months and hosted 10 Fellows in 4 years.

Coordinator of the Milano Group of the COST project on "Green Organic Electrochemistry" D29 – W0006-03, 2003-2007.

Milano Unit coordinator of the Prin project 2008N7CYL5 on "Multiphase matrices based on nano-structured metal oxides for oxygen reduction electrodes in direct alcohol fuel cells (DAFC)", 2009

Coordinator of the "Avventura della Scienza" for the Faculty of Science of the University of Milan, granted by: Cariplo Foundation - 2010

Sandra Rondinini has a rich cooperation activity with authoritative Italian and foreign Groups. It is worthwhile to outline here: Christian Amatore (École Normale Supérieure, Paris, France), Allen J. Bard (The University of Texas at Austin, TX, USA), Juan Feliu University of Alicante), Joaquin Rodriguez-Lopez (University of Illinois at Urbana-Champaign, IL, USA), Carlos M. Sanchez-Sanchez (Sorbonne Universités, UPMC Univ Paris 06, UMR 8235, Paris, France), Dimitri E. Khoshtariya (Academy of Sciences, Tblisi, Georgia).

She has authored and co-authored about 190 publications on national and international, peer reviewed journals, 2 patents and several invited communications to national and international meetings, among which it is worthwhile to mention: 65th ISE Meeting, Lausanne 31/08-4/09/2014 "Electroreductive Dehalogenation: Crossroads for Waste Detoxification and Conversion to Valued Compounds"; SECM8, Xiamen (China) 9-12/10/2015 "CavityMicroTips (CM_T) for the investigation of photocathode materials"

Her activity includes the participation to national and international Bodies and Organizations, as listed here below:

- 2016-to date: Titular Member of the Analytical Chemistry Division of IUPAC
- 2012-to date: Member of the Boarding Committee of FAST

• 2014-2016: Past-President of SCI Lombardia

• 2011-2013: President of SCI Lombardia

• 2008-2010: Past-President of the Electrochemical Division of SCI

• 2008-2010: Vice-President of SCI Lombardia

• 2007-to date: Member of the Working Party on Chemistry and Energy di EuCheMS (European Society on Chemical and Molecular Sciences)

• 2005-2007: President of SCI Electrochemical Division

• 2003-2007: Coordinator of the Milano Unit of the COST project on “Green Organic Electrochemistry” (University of Pairgi12, Belfast, Coimbra, Kiev and Udine) D29 – W0006-03, 2003-2007

• 2002-2006: Coordinator of the Marie Curie Training Site on “Electrochemistry and Corrosion Science for the Environment”

• 1998-to-date: President of the Working Party TERSI of the Italia Association of Industrial Chemistry.

• 1983-to date: Member of the Electrochemical Society (USA)

• 1979-2002: IUPAC activity within the Electroanalytical Chemistry Commission: Member since 1979, Titular Member since 1995, Secretary 1995-1996, Chairperson 1999-2000, co-Chair of the Working Group on pH, she is now IUPAC Fellow.

She has also an intense teaching activity, which started in 1979 within the Industrial Chemistry Curriculum (Electrical Measurements and Process Control, Electrochemistry, Industrial Electrochemistry), and now covers basic courses like Physical Chemistry and advanced courses like “Environmental Electrochemistry” and “Energy: Sources, conversion and Storage”, together with selected topics for the Doctorate School in Industrial Chemistry.