

CURRICULUM VITAE OF DR. ELIZABETH SANTOS

Affiliation:

- * Institut of Theoretical Themistry, Ulm University
 - * Instituto de Física Enrique Gaviola de la Facultad de Matemática Astronomía y Física Universidad Nacional de Córdoba CONICET
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Date of birth: Sept. 9, 1957

Education

First degree diploma in physical chemistry, August 1979, at the University of Córdoba.

Doctorate Doctor of physical chemistry (with summa cum laude) in August 1982 at the Faculty of Chemistry of the University of Córdoba. Supervisor: Prof. Cristina Giordano. Topic: Electrocatalysis at Platinum Electrodes.

Areas of Research

Electrocatalysis – Interfacial Electrochemistry – Single crystal surfaces and nanostructures – Second Harmonic Generation – Self Assembled Monolayers – Electron Transfer Reactions (theoretical and experimental aspects), Density Functional Theory.

Methodology

Experimental: traditional electrochemical techniques, electrochemical impedance spectroscopy, non linear optical techniques (SHG), fotoelectrochemistry, DEMS, XPS, Auger.

Theoretical: quantum chemical calculations, non linear optics, DFT, MD

Awards and Fellowships

- DAAD-Fellowship 1984-1986
- Volkswagen Fellowship 2002
- Abdus Salam Fellowship of the International Centre for theoretical physics, Trieste, Italy 2000.
- Award of the Secretary of Science and Technology of Córdoba to the Academic Excellence 1991.
- Award of the University of Córdoba for Academic Achievements 1991.
- f-cell award for science, f-cell Messe Stuttgart, 2013 (with Prof. W. Schmickler)

Research Visits

- Post-doc in the Physical Department of the University of Bonn, August 1984 – August 1987.
- Research Associate in Analytical Chemistry at the University of Utah, USA October 1991 – March 1992.
- Scientific co-worker at the University of Ulm, June 1993 – August 1996.
- Visit to the EEIE City University, London, England, June-July 1997.
- Visit to the Centre for theoretical physics, Trieste, Italy, September 2000.
- Visit to the Max-Plank Institute, Berlin, Germany, Oct. 1993, July 1997, Oct. 2000.
- Visiting Professor at the University of Ulm, April-July 2005.

Positions held

- Tech and scientific assistant at the University of Córdoba, 1980-1984, 1987-1990.
- Research co-worker at the University of Bonn 1986-1987
- Junior Professor at the University of Córdoba, 1990-1993.
- Full Professor at the Technological University of the Air Force, Córdoba Argentina, 2000-2003.
- Research Associate in Analytical Chemistry at the University of Utah, October 1991 – March 1992.
- Research co-worker at the University of Ulm 1993-1996.
- Research Assistant of the National Council of scientific research and technology (Argentina) 1987-1992.
- Research Associate of the National Council of scientific research and technology (Argentina) 1992-2005.
- Research Independent of the National Council of scientific research and technology (Argentina) since 2005.
- Research co-worker at the Centre for Solar Energy and Hydrogen Research, Ulm, Germany, 2005-2006
- Research co-worker at the University of Ulm 2007.

- Research project leader of the German Research Foundation (DFG) since 2007.

Positions in Academic and Scientific Organizations

- Member of the Academic Council of the Faculty of Chemistry, University of Córdoba, Argentina, 1988-1990.
- Research of the Program *Integrated Expertises* of the International Centre of Migration, Federal Ministerial of Cooperation and Development of Germany, 1996-1998.

Teaching

major courses in General Chemistry, Physical Chemistry, Analytical Chemistry, Mathematics and Physics since 1983 and special courses for postgraduated (PhD Students) at the University of Córdoba, Catamarca, Bahía Blanca (Argentina), University of Bonn (Germany) and Ulm University (Germany) - International Master for Material Science.

Direction of 4 PhD-Thesis and 3 Master-Thesis. Direction of 8 Fellowships and international exchange students.

Scientific and Technological support to the Industry and Public Organizations

- Training course for the Public Health Ministerial of Córdoba, Argentina.
- Consulting for the Company "Plásticos DISE".
- Consultant-Evaluator for FONCyT – CONICET (Agency and Council of Science and Technology, Argentina).
- Consultant-Evaluator for the Project: Training program for Researcher and PhD Students of strategical regions in Argentina in the topic: „*El Hidrógeno como vector energético sustentable*“. (Hydrogen as energy source) Universidad Nacional de Catamarca, Argentina.

Research Projects and International cooperation programs and exchanges

- * Laboratoire de Réactivié' de Surface, Université Pierre et Marie Curie, Paris, Francia (Dr. F. Tielens).
- * Laboratoire des Materiaux Surfaces et Procédés pour la Catalyse (LMSPC), UMR 7515 du CNRS-UdS-ECPM, Strasbourg (Prof. E. Savinova)
- * Physik Department E19, Technische Universität München, (Prof. U. Stimming).
- * Max-Planck Institute (Director: G. Ertl), Berlin, (Dr. B. Pettinger).
- * Institut für Schichten und Grenzflächen am Forschungszentrum Jülich, (Prof. H. Ibach, Dra. M. Giesen, Dr. G. Beltramo).
- * Zentrum für Sonnenenergie- und Wasserstoff-Forschung, Ulm, Alemania (Prof. Garche).
- * Institut für Physikalische Chemie, Universität Karlsruhe, (Prof. R. Schuster)
- * Department of Chemistry, University of Leiden, Holanda (Prof. M. Koper).
- * Kazan State Technological University, Kazan, República de Tatarstan, Rusia, (Prof. R. Nazmutdinov).
- * Institute of Physical Chemistry „Ilie Murgulescu“, Bucarest, Rumania, (Dra. V. Lazarescu).
- * Departamento de Química Física de Interfases y Electroquímica del Instituto de Química Física Rocasolano de Madrid (CSIC), España, (Dr. A. Cuesta)
- * Universidad de Alicante (Prof. Juan Feliú y Enrique Herrero)
- * Instituto de Ing. Electroquímica y Corrosión (INIEC), Departamento de Ingeniería Química, Universidad Nacional del Sur, Bahía Blanca, (Prof. D. Salinas y la Dra. S. García).
- * Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Catamarca.
- * Departamento de Físicoquímica, Facultad de Ciencias Químicas, Universidad Nacional de Córdoba Prof. M. López-Tejelo , Prof. O. Cámara, Prof. A. Baruzzi y Prof. M. Yudi).
- * Unidad Docente de Matemática y Física, Facultad de Ciencias Químicas, Universidad Nacional de Córdoba (Prof. E. Leiva).
- * Instituto de Ciencias Químicas, Universidad Nacional de Santiago del Estero (Prof. B: López de Mishima, Dr. C. Borsarelli).
- * Programa de Electroquímica Aplicada e Ingeniería Electroquímica (PRELINE-FIQ-UNL). (Prof. Abel Chialvo y Dra. Paola Quaino).
- * Programme "People" – Marie Curie Action "Initial Training Networks" – ITN Call Identifier : FP7-People-2007-1-1-ITN: “*Surface Electrochemical Reactivity in Electrocatalysis: A combined Theoretical and Experimental Approach*”.
- * Deutsche Forschung Gemeinschaft: „Halbleiter-einkristallelektroden, die durch adsorbatgeschützte Goldcluster modifiziert sind“. Deutsch-rumänisches Kooperationsprojekt (436 RUM 113/33/0-1).
- * STRUCTURE-REACTIVITY RELATIONSHIPS OF Pt AND Pd NANOARRAYS. Programme of Research and Network, European Union.
- * Exchange Programs between Argentina and Germany funded by CONICET, MinCyT, DAAD, Volkswagen Stiftung, DLR, WUS, CIM, BMF.

* 2007-2009: Deutsche Forschung Gemeinschaft (Schm 344/34-1, Sa 1770/1-1): “Theorie der Elektrokatalyse an Metallelektroden”.

* 2009-2011: Deutsche Forschung Gemeinschaft (Schm 344/34-2, Sa 1770/1-2): “Theorie der Elektrokatalyse an Metallelektroden”.

*2011-2016: Research Unit FOR 1376: *Elementary reaction steps in electrocatalysis: Theory meets Experiment*. Deutsche Forschungsgemeinschaft.

Other Activities

* Member of the referee panel of different Journals: Langmuir, Electrochim. Acta, Analytica Chimica Acta, American Chemical Society, PCCP, Royal Research, Electrocatalysis, Power Sources, Surface Science, Materials Chemistry and Physics, Colloid Interface Science, International J. of Hydrogen Energy, J. of Electroanal. Chem., Angewandte Chemie, J. Phys. Chem., J. Phys. Status Solidi, J. Sol. State Electrochem., Royal Society Chemical Advances.

* Evaluation for Deutsche Forschungsgemeinschaft (Germany), Humboldt Stiftung (Germany), Ministerio de Defensa, CONICET and FonCyT (Argentina).

Participation at International Conferences and Meetings (about 20 invitation during the 5 last years)

Scientific Publications in International Journals: (about 120 articles, 8 chapters and 2 books)