BIOGRAPHICAL SKETCH

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NAME: Rolando J. Tremont

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Full Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Universidad de Oriente, Sucre,Venezuela	B.S.	1993	Pure Chemistry
University of Puerto Rico-RP, San Juan, PR	M.S.	2000	Analytical Chemistry
University of Puerto Rico-RP, San Juan, PR	Ph.D.	2002	Analytical Chemistry
Clemson University, SC, USA	Postdoc	2005	Electrochemical studies of organic compounds

A. Personal Statement

Studies electrochemical and Surface Analysis in the modification of metal surface with organic compounds, using seft-assembled monolayer (SAM) technique. These surfaces can be used in catalysis, corrosion inhibitors, and control of metallic nanoparticles, biosensors and growth of crystals. Also, analyzes environmental samples to determine heavy metals and other metals, in samples of water, soil, sediments and in any sample that needs to be analyzed.

B. Positions and Honors

August2015-Present Editor-in-Chief, Equilibrium, Journal of Natural Science, University of Puerto Rico at Humacao. www.upr.edu/humacao/equilibrium

Sep/2011-Aug/2015 **Co-PI** Proposal entitled: **"UPR-Mayaguez Center for Education and Training in Agricultural and Related Sciences (CETARS)**".
(Grant number **2011-38422-30835**), USDA.

Jan/2007- Dec/2017 Head of Department, Department of Chemistry, University of Puerto Rico at Humacao.

July/2012- Present Full Professor-Department of Chemistry-University of Puerto Rico at Humacao

July/2005 – 2012 Associate Professor - Department of Chemistry - University of Puerto Rico at Humacao.

Aug/2002- Jun/05: Assistant Professor - Department of Chemistry - University of Puerto Rico at Humacao.

Jan/1997 – Jun/02 Teacher Assistant – Department of Chemistry, University of Puerto Rico at Río Piedras, Puerto Rico.

Aug/1990-Dec/97 Instructor - Department of Chemistry – Universidad de Oriente, Núcleo de Sucre, Venezuela.

Honors and Awards

2010-Present Reviewer in different international journals (Electrochimica Acta, journal of Electroanalytical Chemistry and Nanotechnology)

2000 – 2002 EPSCoR (National Science Foundation-Experimental Program to Stimulate Competitive Research).

2004 Prize to the best research Work presented at "XII Encuentro de Electroquímica", Venezuela. Title: "Systematic Study of Corrosion Damage caused by Petroleum Separation".

C. Contributions to Science

1) Tremont, R.J., Cabrera, C.R, De Jesús-Cardona H., and Castro, R.J. 2000. (3-Mercaptopropyltrimethoxysilane as Cu Corrosion Inhibitor in KCl Solution. J. Applied Electrochemistry. 30:737-749.

2) Cabrera, C.R, Warner J.D, Mueller C.H, Van Keuls F., Miranda F.A, Tremont R.J, Blasini, D.R, and Morales A. 2001. Ferroelectric Charge Injection MOSFET Devices. Integrated Ferroelectrics. 38: 269.

3) Cabrera, C.R., Warner, J.D., Mueller. C.H., Van Keuls, F., Miranda, F.A., Tremont, R.J., Blasini, D., and Morales, A.. 2001. Self-Assembled 3-Mercaptopropyltrimethoxysilane (MPS) on $Ba_{0.5}Sr_{0.5}TiO_3$ as an Adhesion Layer for Microwave Devices. Materials Research Society (MRS) Proceedings.*666*, F9.1/1-F9.1/6.

4) Tremont R.J., and Cabrera C.R. 2002. Corrosion Protection Comparison of Copper by a Self assembled Monolayer of 1-Propanethiol and Propyltrimethoxysilane: A comparison with 3 mercaptopropyltrimethoxysilane. J. of Applied Electrochemistry. 32: 783-795.

5) Blasini D.R, Tremont R.J., and Cabrera C.R, Batina, N., and González, I. 2003. Self-Assembled (3-Mercaptopropyl)trimethoxysilane on Iodine Coated Gold Electrodes. J. Electroanalytical Chemistry. 540: 45-52.

6) Brito, R, Tremont R.J., Feliciano, O., and Cabrera, C.R. 2003. Chemical Derivatization of Self-Assembled 3-Mercaptopropionic and 16-Mercaptodecanoic Acids at Platinum Surface with 3-Aminopropyltrimethoxysilane: A Spectroscopic and Electrochemical Studies. J. Electroanalytical Chemistry. 540: 53-62.

7) Tremont, R.J., Blasini, D., and Cabrera, C.R. 2003. Controlled Self-Assembly of Mercapto and Silane Terminated Molecules at Cu Surfaces. Journal Electroanalytical Chemistry. 556:147-158.

8) Tremont, R.J., Cruz, G., and Cabrera, C.R. 2003. Pt nanoparticles on Cu surface modified with 3-mercaptopropyltrimethoxysilane and 1-propanethiol. J. Electroanalytical Chemistry. 558: 65-77.

9) Bolívar, H., Izquierdo, S., Tremont, R.J., and Cabrera, C.R. 2003 $Pt/MoO_x/MoSe_2$ Electrodes Prepared from Li Intercalated-Exfoliated $MoSe_2$: Applications in Methanol Oxidation. J. Appl. Electrochemistry. 33: 1191-1198.

10) Sosa, E., Cabrera-Sierra, R., Oropeza, M.T, Hernández, F., Casillas, N., Tremont, R.J. Cabrera, C.R, and González, I. 2003 Chemical Characterization of Corrosion Films Electrochemically Grown on Carbon Steel in Alkaline Sour Environment. J. of The Electrochemical Society. 150 (11), B530-B535.

11) Sosa, E., Cabrera-Sierra, R., Oropeza, M.T., Hernández, F., Casillas, N., Tremont R.J., Cabrera, C.R, and Gonzalez, I. 2003 Electrochemically grown passive films on carbon steel (SAE 1018) in alkaline sour medium. Electrochimica Acta. 48 (12), 1665-1676.

12) Brito, R., Tremont, R.J., and Cabrera, C.R. 2004. Study of the electron transfer kinetics across a derivatized self assembled monolayer on platinum by cyclic voltammetry and electrochemical impedance spectroscopy. J. Electroanalytical Chemistry. 574: 15-22.

13) Morales-Cruz, A.,L, Tremont, R.J., Martínez, R., Romañach, R., and Cabrera, C.R.. 2005. Atomic force measurements of 16-mercaptohexadecanoic acid and its salt with CH_3, OH, and $CONHCH_3$ functionalized self-assembled monolayers. Applied Surface Science. 241(3-4): 371-383.

14) Markus Frei , François Diederich, Rolando Tremont, Tanya Díaz , Luis Echegoyen, 2006, Tetrathiafulvalene-(TTF) bridged Resorcin[4]arene Cavitands: Towards New Electrochemical Molecular Switches, Helvetica Chimica Acta, 89 (9) 2040 – 2057.

15) Tanya L. Díaz, María Malavé, Mirna Rivera, Jorge Castillo, Carlos R. Cabrera, Rosa Brito, Rolando J. Tremont, 2008, Modification of Au Surfaces Using New Ferrocene Derivatives, Applied Surface Science, 254 (6), 1587-1592.

16) Luisa Rojas de Astudillo, Linoshka Rivera, Rosa Brito-Gómez, and Rolando J. Tremont, 2010, Electrochemical study of 1,4-Benzoquinone on Gold Surface Modified, J. Electroanalytical Chemistry, 640, 56-60.

17) Book Chapter: Luisa Rojas de Astudillo, Rosa Brito Gómez, Rolando J. Tremont, 2012: Detection of Thiols Using Hydroquinone on Gold Surface, In Book: hydroquinone: Production, Uses and Health Effects, ISBN: 978-1-62100-258-1, Editors: Fritz Gokden and André Lazzarotto, Nova Science Publishers, NY, USA.

18) Book Chapter: Rosa D. Brito Gómez and Rolando J. Tremont, 2012 Reactions for the derivatization of self-assembled monolayers after their formation on metallic surfaces, In Book: Recent Advances in Electrochemical Research, 2012: ISBN: 978-81-7895-545-2, Transworld Research Network (India).

19) Mario Ortega-Núñez, Rolando J. Tremont, Carmen A. Vega-Olivencia, Juan López-Garriga, 2012, Electrochemistry of Hemoglobin I from *Lucina pectinata* immobilized on a modified gold electrode with 3-mercaptopropionic acid, International Journal of Analytical and Bioanalytical Chemistry; 2(4): 218-227.

20) Mario Ortega-Núñez, Rolando J. Tremont, Carmen A. Vega-Olivencia, Juan López-Garriga, 2012, Modification of Cysteine-Gold Modified Electrode with Hemoglobin I from *Lucina pectinata*: XPS study and Electrochemical Activity for Hydrogen Sulfide, International Journal of Materials and Biomaterials Applications; 2(4): 29-36.

21. Loisangela Alvarez, Blanca Rojas de Gascue, Rolando J. Tremont, Edgar Marquez, Euclides J. Velazco, 2019, *Synthesis and characterization of aluminum-doped bismuth subcarbonate*, Materials (MDPI), 1-12.

22. Natalia N. Olmeda-Viera, Jennifer Camacho-Lugo, Coral Alicea-Mauneto, Erika Serrano-Diaz, Rosa D. Brito-Gómez, Rolando J. Tremont, 2022, Reaction of 3-mercapto-1-propanol with acrylamide on gold surfaces, Servolab Science News Vol 1 (1): 60-70.

23. Luisa Rojas de Astudillo, Rosa Brito Gómez, Rolando. J. Tremont, 2022, Uso de la benzoquinona para la determinación de moléculas de tiol en una superficie de oro modificada, Revista de Ingeniería y Tecnología Educativa, Universidad de Los Andes (Venezuela), Vol. 5, Núm. 1 Especial.

24. Natalia N. Olmeda-Viera, Jorge M. Marcano-Bermudez, Nicole Lopez-Pena, Gina Garcia, Angelique Perez, Tamesis Serrano, Cristian Chamorro, Jonathan Pacheco, Yamil Esquilin, Rosa D. Brito-Gómez, Rolando J. Tremont, Determination of heavy metals in common crabs in two regions of Puerto Rico, Chemosphere, 2022 (submitted).

D. Additional Information: Research Support and/or Scholastic Performance

Dr. Tremont is an active member of the ACS. On other activities, He has given workshops at middle and high schools in small towns in the middle of the island of Puerto Rico. These activities have been coordinated through the Department of Chemistry (UPRH). Through the years, Dr. Tremont's laboratory has had high school and

undergraduate students doing research for scientific fairs, in Environmental Science, nanotechnology areas, Electrochemistry and Interfaces Laboratory. Some have participated in National and International Congresses.

Dr. Tremont has mentored in different Masters and PhD theses in the areas of Environmental Science, Electrochemistry, and Surface Science. He was Principal Investigator of a proposal in Environmental Science, under the auspices of the United States Department of Agriculture (USDA) (2011-2015).