CURRICULUM VITÆ

Benjamin Scharifker



CONTENTS

Personal data 1
Education 1
Scholarships and Awards 1
Teaching and research appointments 2
Administration 2
Boards and committees 3
Membership in scientific and professional societies 4
Research interests 4
Courses thaught 4
Supervision of research students 4
Books 6
Scientific publications 6
    in refereed journals and book chapters 6
    in conference proceedings 13
Patents of invention 15
Other publications 16
Literature citations 18
Invited lectures 18
Journal reviewer 23
Funding, technical reports 23

PERSONAL DATA

Name:	Benjamin Ruben Scharifker Podolsky
Born:	Buenos Aires, Argentina, 21 September 1953
Nationality:	Venezuela and Argentina
Marital Status:	Widower, three children (Julieta, Diego, Alex)
Home Address:	Res. Biarritz, PH 19, 1ª Av. Los Palos Grandes, Chacao, Miranda, Venezuela. *Phone*: +58 424 186 2003.

Current appointment:	Professor emeritus Universidad Simon Bolívar, Departamento de Química Apartado 89000, Caracas 1080-A	*Tel*: +58 212 906 3968. *Fax*: +58 212 906 3969. *E-mail*: benjamin@usb.ve

EDUCATION

1980	Post-doctoral studies, University of Southampton. (*Advisor*: Dr. Laurence M. Peter).
1979	Ph.D. (Physical Chemistry and Electrochemistry), University of Southampton, U.K. Thesis: "Nucleation and phase formation" (*Advisor*: Prof. Graham Hills).
1976	Licentiate in Chemistry, Universidad Simon Bolívar (USB), Caracas.
1970	Baccalaureate in Sciences, Colegio Moral y Luces, Caracas.

SCHOLARSHIPS AND AWARDS

2018	Engineer Antonio José de Sucre Award, Engineering Society of Venezuela, Caracas.
2018	Distinguished Guest, Libertador City Council, Mérida State, Venezuela.
2018	Pedro Rincón Gutiérrez Award, Universidad de Los Andes, Mérida, Venezuela.
2017	Simón Bolívar Prize for University achievements, Universidad Simón Bolívar, Caracas.
2016	Commemorative Medal "Bicentennial of the death of Generalissimo Francisco de Miranda".
2014	Ernesto Mayz Vallenilla Award, Universidad Simon Bolívar, Caracas.
2014	Lanzas Coloradas Award, Casa Uslar Pietri Foundation, Caracas.
2012	Professor Emeritus, Universidad Simon Bolivar, Caracas.
2012	Exemplary Citizen Award, Metropolitan Mayor of Caracas.
2009	Fellow, The World Academy of Sciences (TWAS).
2008	City of Baruta Award, Miranda State, Venezuela.
2003	Member, Latin American Academy of Sciences.
2003	Member, National Academy of Physical, Mathematical and Natural Sciences, Caracas.
1998	Corresponding member, Academy of Physical, Mathematical and Natural Sciences, Caracas.
1996	Andres Bello Prize in Biological and Chemical Sciences [*J. Electroanal. Chem*., 383, 37 (1995)] USB.

1993	Lorenzo Mendoza Fleury Prize, Polar Foundation.
1991	Prize for published work in Chemistry [*J. Electroanal. Chem*., 300, 85 (1991)] National Council for Scientific and Technological Research (CONICIT).
1990-2012	Researcher, levels 3 & 4, Program for Promotion of Researchers, Venezuela.
1989	Francisco Torrealba Prize for research achievements, Simon Bolivar University.
1988	Andres Bello Prize in Fundamental Sciences [*J. Electroanal. Chem*., 240, 61 (1988)] USB.
1986	Tajima Prize, International Society of Electrochemistry.
1979-1980	Science Research Council, U.K., post-doctoral studies.
1976-1979	National Fund for Research in hydrocarbons (Venezuela), doctoral studies.

TEACHING AND RESEARCH APPOINTMENTS

2012	Professor emeritus, Simon Bolivar University.
2009	Benjamin Meaker Visiting Professor, Institute for Advanced Studies, University of Bristol, UK.
1989-2012	Professor, Simon Bolivar University.
1988	Visiting professor, University of Southampton.
1984-1989	Associate professor, Simon Bolivar University.
1984-1986	Senior scientist, Hydrogen Research Center, Texas A&M University, USA
1980-1984	Aggregate professor, Simon Bolivar University.
1979-1980	Research fellow, University of Southampton.
1977-1980	Instructor, Course on Advanced Techniques in Electrochemistry, University of Southampton, UK.
1976	Instructor, Simon Bolivar University, Venezuela.

ADMINISTRATION

2011-2021	Rector, Metropolitan University, Caracas.
2010-2011	Academic Vice-Rector, Metropolitan University, Caracas.
2009-2011	President, Academy of Physical, Mathematical and Natural Sciences of Venezuela.
2005-2009	Rector, Simon Bolivar University.
2005-2009	1st Vice-President, Academy of Physical, Mathematical and Natural Sciences.
2001-2005	Vice Rector for Administration, Simon Bolivar University.
2000-2003	Director at large, Venezuelan Foundation for Promotion of Researchers.
1994-1999	Director at large, National Council for Scientific and Technological Research (CONICIT).
1992-1996	Dean of Research and Development, Simon Bolivar University.
1991-1994	President, Venezuelan Society of Electrochemistry.
1989-1994	Coordinator for Fine Chemistry, Inter-American Development Bank–CONICIT program.
1987-1989	Head of Chemistry Department, Simon Bolivar University.
1986-1987	Head of Physical Chemistry Laboratory, Simon Bolivar University.

1984-1988	Vice-president, Friends of the Air Foundation, Houston, Texas.
1984-1986	Assistant Director, Hydrogen Research Center, Texas A&M University.
1982-1984	Head of Physical Chemistry Section, Simon Bolivar University.
1981-1984	Head of Physical Chemistry Laboratory, Simon Bolivar University.

BOARDS AND COMMITTEES

Since 2026	Editorial Board, *Cuadernos UCAB.*
Since 2025	Academic Editorial Board, *International Journal of Electrochemistry*.
Since 2025	President of the Board, Espacio Anna Frank, Caracas.
2023-2025	Editorial Board, *Academia Materials Science*.
2022	Invited Editor, Special Collection on Electrochemistry in Latin America, *ChemElectroChem*.
2019-2025	Member, Regulating Council, Controlled Designation of Origin of Rums in Venezuela.
Since 2016	Member of the Board, Espacio Anna Frank, Caracas.
Since 2015	Member of the Board, Envases Venezolanos S.A.
2013-2021	Secretary of the Board, Venezuelan Association of University Rectors.
Since 2010	Member of the Board, Asamblea de Educación, Caracas.
2010-2025	Editorial Board, *International Journal of Electrochemistry*.
2004-2005	Coordinator of working group of Vice Rectors for Administration, National Council of Universities.
2002-2004	Publication Committee, International Society of Electrochemistry.
2001-2003	Member of Board, Venezuelan Association for the Advancement of Science.
2001	Secretary General Caracas Chapter, Venezuelan Association for the Advancement of Science.
1999	Editorial Committee, *Latin American Journal of Chemistry*.
1998-2000	Member of Higher Council, Simon Bolivar University.
1997	Invited Editor, *J. Braz. Chem. Soc*. 8(2), 91-196 (1997).
1996	Member of Organizing Committee, 12th Ibero-American Electrochemistry Congress, Mérida.
1996-1998	Member of General Council, International Institute for Advanced Study, Caracas.
1995	President of Organizing Committee, 45th Annual Convention of Venezuelan Association for the Advancement of Science, Caracas.
1994-1999	Member of Higher Council, National Research Council, CONICIT.
1994-2003	Local Representative in Venezuela, Royal Society of Chemistry.
1994-1999	National Secretary, International Society of Electrochemistry.
1994-1996	General Coordinator of Scientific, Humanistic and Technological Development Councils of National Universities, National Council of Universities.
Since 1992	Field Editor (Chemistry), *Acta Científica Venezolana*.
1991-1993	President, Technical Committee in Chemical Sciences, CONICIT.

1991-1992	Board Member, Program for Promotion of Researchers.
1990-1996	Committee for Physical, Mathematical and Chemical Sciences, Program for Promotion of Researchers.
1990-1991	Research and Development Council, Simon Bolivar University.
1990-1991	Secretary for Academic Affairs, Professors Association, Simon Bolivar University.
1989-1993	Vice-president, Galilean Society, Simon Bolivar University.
1987-1993	Member of Higher Council, Simon Bolivar University.
1987-1989	President, Galilean Society, Simon Bolivar University.
1987-1988	Organization Secretary, Venezuelan Society of Electrochemistry.
Since 1984	Editorial Board, *Portugaliæ Electrochimica Acta*.
1983-1985	Technical Committee in Chemical Sciences, CONICIT.

MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL SOCIETIES

Galilean Society, International Society of Electrochemistry, The Electrochemical Society, Venezuelan Association for the Advancement of Science, Venezuelan Society of Chemistry, Venezuelan Society of Electrochemistry.

RESEARCH INTERESTS

Nucleation and phase formation. Electrocrystallization. Energy conversion and clean energies. Interfacial electrochemical reactions. Electrocatalysis. Conducting polymers. Adsorption at solid-liquid interphases. Ultramicroelectrodes. Electrochemical oxygen transfer reactions.

COURSES THAUGHT

General Chemistry. General Chemistry Laboratory. Analytical Chemistry. Instrumentation. Physical Chemistry. Physical Chemistry Laboratory. Electrochemistry. Special Topics in Physical Chemistry. Electrochemistry Workshop.

SUPERVISION OF RESEARCH STUDENTS

36. C. Hidalgo, *Study of the electrodeposition of bimetallic phases of the silver-palladium system*, Degree Chem., USB, 2014.
35. S. Blanco, *Metal nanowires: synthesis, characterization and application to the development of sensors*, Dr. Eng., USB, 2014.
34. O. Díaz, *Electrochemical formation of bimetallic phases*, M.Sc. Chem., USB, 2011.
33. R. Arenare, *Electrochemical characterization of solid oxide fuel cells*, Dr. Chem., USB, 2009.
32. D. Branco, *The potentiostatic transient for electrochemical nucleation with diffusion-controlled growth of spherical caps*, Degree Chem., USB, 2008.
31. D. Mazaira, *The potentiostatic current transient for nucleation with diffusion-controlled growth. Hierarchical overlap model*, Degree Chem., USB, 2006.
30. M.E. Vicioso, *In situ IR spectroelectrochemical study of thiourea and thiocyanate electrooxidation on platinum, gold and copper*, M.Sc. Chem., USB, 2004.

29. R. Buceta, *Study of adsorption enthalpies of hydrogen on platinum in aqueous media*, Degree Chem., USB, 2002.

28. I. Suárez, *Kinetic study of electrochemical microstructures*, Dr. Chem., USB, 2001.

27. M. Méndez, *Flow rate effects on the protecting properties of crude oils against CO2 corrosion*, Degree Chem., USB, 2001.

26. J.C. Chesneau, L. Martínez and A. Montero, *Characterization of a pump-type flow reactor for electrolysis of emulsions*, Degree Chem. Eng., USB, 1999.

25. Y. Zucaro, *Characterization of polypyrrole-polyacrylamide mixtures*, M.Sc. Chem., USB, 1999.

24. I. Medina, *Hydrodesulfuration of model molecules using microwaves as heating source*, Degree Chem., USB, 1998.

23. R. Arena, *CO2 corrosion of carbon steels evaluated with electrochemical impedance using rotating cylinders*, M.Sc. Chem., USB, 1998.

22. E. Bastidas and D. Prince, *Study on the physical properties of polypyrrole and polypyrrole/polypropylene composites*, Degree Mater. Eng., USB, 1997.

21. O. Mejías, *Microgravimetric study of the redox process of polypyrrole films*, Degree Chem., USB, 1997.

20. A. Serruya, *Kinetic study of electrochemical nucleation and spatial distribution of Ag, Hg, Tl and Pb nuclei*, M.Sc. Chem., USB, 1997.

19. P. Ferreiro, *Synthesis and characterization of conducting polymers applied to secondary batteries*, Degree Mater. Eng., USB, 1996.

18. J. Mostany, *Study of conducting metal and polymer phases on electrodes*, Dr. Chem., USB, 1995.

17. O. Yépez, *Studies on the electrochemical oxidation of one-carbon species*, Dr. Chem., USB, 1995.

16. D. Fermín, *Mechanism of the electrochemical formation of polypyrrole films in aqueous media*, Degree Chem., USB, 1992.

15. A. Serruya, *In-situ microscopic study of the spatial distribution of nuclei on electrodes and the kinetics of nucleation*, Degree Chem., USB, 1992.

14. C.L. Ferro, *Microcalorimetric studies of the electrochemical double layer*, Degree Chem., USB, 1990.

13. W. Marino, *Electrochemical formation and growth of polypyrrole films and their modification with metal particles*, Degree Chem., USB, 1990.

12. A. Leone, *Synthesis, characterization and electrocatalytic applications of polyaniline thin films*, Degree Chem., USB, 1989.

11. D.C. Alonzo, *Some structural and electrocatalytic aspects of metal adatoms on platinum*, Degree Chem., USB, 1988.

10. N. Kasrin, *Effects of halides and pH on the formation and reduction of iridium oxide films*, Degree Chem., USB, 1984.

9. G.C. Wehrmann, *Study of viologen reduction processes*, Degree Chem., USB, 1984.

8. L. Milgram, *Electrodeposition of cadmium sulphide*, Degree Chem., USB, 1984.

7. J. Parra, *Effect of halogenides on the electrodeposition of lead onto vitreous carbon*, Degree Chem., USB, 1984.

6. C.A. Benucci, *Study on the formation of two-dimensional phases during sulphide adsorption on mercury*, Degree Chem., USB, 1984.

5. Z.M. Ferreira, *Electrodeposition of lead sulphide*, Degree Chem., USB, 1983.

4. J. Mostany, *Studies on three-dimensional nucleation*, Degree Chem., USB, 1982.

3. M.E. Marmodoro, *Lead deposition onto single crystals and polycrystalline silver in the presence of halides*, Degree Chem., USB, 1982.

2. R.J. Rugeles, *Electrocrystallization of copper sulphide on copper*, Degree Chem., USB, 1982.

1. J.D. Reid, *Galvanostatic studies of anodic film growth*, B.Sc. Chem., University of Southampton, 1979.

BOOKS

6. *Studies on Electrochemical Phase Formation*, Editorial Académica Española, Chesnau, (2019), 80 pp. (ISBN: 363-973-768-7).

5. *The professor's job*, Collection Alma Mater, Equinoccio, Caracas (2013), 28 pp.

4. *Proceedings of the 10th National Meeting on Electrochemistry*, I.J. Suárez, B.R. Scharifker and J. Mostany (Eds.), Venezuelan Electrochemical Society, Caracas (1998), 186 pp. (ISBN: 980-237-174-2).

3. *Solar hydrogen, clean energy of the future*, Spanish version by B. Scharifker et al., of *Solar Hydrogen Energy, the power to save the Earth*, by J. O'M. Bockris, T.N. Veziroglu and D. Smith, Cuatro Vientos, Santiago de Chile (1994), 158 pp (ISBN: 956-242-012-4).

2. *Monographs of Chemistry*, G. Agrifoglio, R. Almeida, C. Bifano, L. Cortés, C. De la Cruz, D. Iacocca, S. Krestonosich, M.B. Mostue, W. Olivares and B. Scharifker, Deanna Marcano (Ed.), Miró, Caracas (1992):

   Stoichiometry, 99 pp (ISBN: 980-316-014-1). 2nd edn., 1997 (ISBN: 980-316-027-3).

   Atomic structure and periodic table, 97 pp (ISBN: 980-316-019-x).

   Chemical bond, 112 pp (ISBN: 980-316-020-x).

   States of matter, 121 pp (ISBN: 980-316-021-x).

   Solutions, 125 pp (ISBN: 980-316-022-2).

   Chemical equilibrium, 129 pp (ISBN: 980-316-021-4).

   Energy, entropy and chemical dynamics, 207 pp (ISBN: 980-316-024-9).

   Electrochemistry and redox reactions, 86 pp (ISBN: 980-316-023-0).

1. *Proceedings of the fourth National Meeting on Electrochemistry*, B.R. Scharifker, I.J. Suárez and J. Mostany (Eds.), Venezuelan Electrochemical Society, Caracas (1991), 395 pp (ISBN: 980-237-047-9).

SCIENTIFIC PUBLICATIONS

REFEREED JOURNALS AND BOOK CHAPTERS

135. A generalized distributed-kinetics model for electrochemical phase formation: linking local heterogeneity to ensemble response, D. Torres, R. Vargas, B.R. Scharifker, J. Ustarroz, submitted (2026).

134. Keys to University reform in Venezuela: Higher Education as an engine for democratic transition, *Light in the tunnel. Contributions to education reform accompanying the necessary and urgent transition to democracy in Venezuela*, R.A. Uzcátegui (Ed.), Ediciones de la Memoria Educativa Venezolana, Caracas, ISBN: 978-980-18-8467-5, 35-43 (2026); *Bol. Acad. Ciens. Fís. Mat. Nat.* 86(1), 29-33 (2026).

133. Crisis and Hope: Science in Venezuela and today's challenges, B.R. Scharifker, *Bol. Acad. Ciens. Fís. Mat. Nat.* 85, 33-38 (2025).

132. Electrochemical approach for hydrogen technology: Fundamental concepts and materials, V. Márquez, E. Ng, D. Torres, C. Borrás, B.R. Scharifker, F.M. Cabrerizo, L. Madriz, R. Vargas, in *Advances in Catalysts Research. Advances in Material Research and Technology*, S.J. Ikhmayies (Ed.) Springer Nature, Switzerland, ISBN: 978-3-031-49107-8, 339-376 (2024).

131. Diffusion-controlled three-dimensional nucleation phenomena: a comprehensive review of the standard model and extensions, J. Mostany, B.R. Scharifker, M. Romero-Romo, M.E. Palomar-Pardavé, in *Nucleation and Growth in Applied Materials*, M.E. Palomar-Pardavé, T.L. Manh (Eds.), Elsevier, Amsterdam, ISBN: 978-0-323-99537-5, 15-40 (2024).

130. On the transition from 2D to 3D nucleation during the potentiostatic Zn electrodeposition from reline deep eutectic solvent, G. Vidal-García, J. Aldana-González, M. Romero-Romo, M.T. Ramírez-Silva, M.M.M. Teutli-León, D. Hernández-Pérez, J. Mostany, B.R. Scharifker, M.E. Palomar-Pardavé, *J. Solid State Electrochem*. 28, 1631-1639 (2024).

129. Personal Memory of the Electrochemistry Group of the Simón Bolívar University between 1975 and 1999, *Revista de Ingeniería y Tecnología Educativa (RITE)* 5, 21-31 (2022).

128. Editorial: Electrochemistry in Latin America (with N.M. Vargas-Barbosa, A-S Varela and C.A. Martínez-Huitle), *ChemElectroChem* e202200961 (2022).

127. Electroanalytical determination of the chemical oxygen demand on PbO_2 – Bi electrodes, D. Flores, L. Madriz, R. Vargas, B.R. Scharifker, *Afinidad* 78 (593), 105-114 (2021).

126. Unraveling kinetic effects during photoelectrochemical mineralization of phenols. Rutile:Anatase TiO_2 nanotubes photoanodes in thin-layer condition, D. León, A. Maimone, D. Carvajal, L. Madriz, B.R. Scharifker, F.M. Cabrerizo, R. Vargas, *J. Phys. Chem. C*, 125, 610-617 (2021).

125. Electrochemical formation of copper phosphide from aqueous solutions of Cu(II) and hypophosphite ions, D. Torres, L. Madriz, R. Vargas, B.R. Scharifker, *Electrochim. Acta* 354, 136705 (2020).

124. Photocatalysis and photoelectrochemical glucose oxidation on Bi_2WO_6: conditions for the concomitant H_2 production, L. Madriz, J. Tatá, D. Carvajal, O. Núñez, B.R. Scharifker, J. Mostany, C. Borrás, F.M. Cabrerizo, R. Vargas, *Renew. Energy* 152, 974-983 (2020).

123. Chemical kinetics in solar to electrochemical energy conversion: the photocatalytic oxygen transfer reaction, R. Vargas, D. Carvajal, L. Madriz, B.R. Scharifker, *Energy Rep.* 6, 2-12 (2020).

122. Dispatches from a world in turmoil, M. Fawaz, B.R. Scharifker, M. Moraes R., M.E. Ibrahim, S. Moradi, E. Medina, W. Maziak, M.H. Sham, C. Hidalgo, J. Martínez Alier, *Nature* 576, 382-384 (2019).

121. High field growth of semiconducting anodic oxide films on metal surfaces for photocatalytic application, R. Vargas, D. Carvajal, B. Galavis, A. Maimone, L. Madriz, B.R. Scharifker, *Int. J. Photoenergy* 2571906, 15 pp. (2019).

120. Science struggles on in my ravaged country, *Nature* 545, 135 (2017).

119. Three-Dimensional nucleation with diffusion-controlled growth: A comparative study of electrochemical phase formation from aqueous and deep eutectic solvents, P. Sebastián, L. Botello, E. Vallés, E. Gómez, M. Palomar-Pardavé, B.R. Scharifker, J. Mostany, *J. Electroanal. Chem*. 793, 119-125 (2017).

118. Heterogeneous photocatalysis under solar light based on TiO_2 and Bi_2WO_6: Environmental applications, *Rev. Univ. Zulia, Ciens. Exact. Nat. Salud* 7(18), 11-54 (2016).

117. Photoelectroxidation of organic compounds with strong adsorption on TiO_2: Formulation of a kinetic model, D. Carvajal, R. Vargas, C. Borrás, J. Mostany, B.R. Scharifker, *Catalisis* 5, 89-96 (2016).

116. Nucleation kinetics and contact angles of silver clusters electrodeposited on indium tin oxide surfaces, D. Branco P., K. Saavedra, M. Palomar-Pardavé, C. Borrás, J. Mostany, B.R. Scharifker, *J. Electroanal. Chem*. 765, 140-148 (2016).

115. Electrochemical oxygen transfer reactions: Electrode materials, surface processes, kinetic models, linear free energy correlations and perspectives, R. Vargas, C. Borrás, D. Méndez, J. Mostany, B.R. Scharifker, *J. Solid State Electrochem*. 20, 875-893 (2016).

114. A novel nickel nanowire amperometric sensor: direct current vs. alternating current strategies for ethanol, acetaldehyde and acetylcholine detection, S. Blanco, R. Vargas, J. Mostany, C. Borrás, B.R. Scharifker, *J. Electroanal. Chem*. 740, 61-67 (2015).

113. A rotating disk study of the photocatalytic oxidation of p-nitrophenol on phosphorous-modified TiO_2 photocatalyst, D. Méndez, R. Vargas, C. Borrás, S. Blanco, J. Mostany, B.R. Scharifker, *Appl. Catal. B*, 166-167, 529-534 (2015).

112. On the model describing potentiostatic current transients recorded during the mass transport-controlled nucleation of hemispheres in the presence of forced convection, M.G. Montes de Oca, M. Palomar-Pardavé, J. Mostany, M. Romero-Romo, J. Aldana-González, B.R. Scharifker, *Procedia Chem*. 12, 27-33 (2014).

111. Modelling the growth of nanowire arrays in porous membrane templates, S. Blanco, R. Vargas, J. Mostany, C. Borrás, B.R. Scharifker, *J. Electrochem. Soc*. 161, E3341-E3347 (2014).

110. Nucleation and growth of new phases on electrode surfaces, B.R. Scharifker, J. Mostany, in *Developments in Electrochemistry: Science inspired by Martin Fleischmann*, D. Pletcher, Z-Q. Tian, D. Williams (Eds.), Wiley, New York, ISBN: 978-1-118-69443-5, 65-76 (2014).

109. Electrochemical oxidation of Dichlorvos on SnO_2-Sb_2O_5 electrodes, R. Vargas, S. Díaz, L. Viele, O. Núñez, C. Borrás, J. Mostany, B.R. Scharifker, *Appl. Catal. B* 144, 107-111 (2014).

108. Phenol degradation using glassy carbon electrodes modified with particles of Co-Mo alloy, S.I. Orozco, L.M. Blanco, M.A. Garza, V.A. Gonzalez, C. Borrás, B. Scharifker, *Int. J. Electrochem. Sci*. 8, 5698-5709 (2013).

107. Current transient study of the kinetics of nucleation and diffusion-controlled growth of bimetallic phases, O. Díaz Morales, J. Mostany, C. Borrás, B.R. Scharifker, *J. Solid State Electrochem*. 17, 345-351 (2013).

106. Kinetics of surface reactions on rotating disk electrodes, R. Vargas, C. Borrás, J. Mostany, B.R. Scharifker, *Electrochim. Acta* 80, 326-333 (2012).

105. Layered double hydroxides for electrochemical sensing applications, L. Fernandez, C. Borrás, J. Mostany, B. Scharifker, in *Recent Advances in Electrochemical Research*, R.J. Tremont (Ed.), Transworld Research Network, Trivandrum, ISBN: 978-81-7895-545-2, 115-140 (2012).

104. Electrocatalysis of the anodic oxygen transfer reaction, R. Vargas, C. Borrás, J. Mostany, B.R. Scharifker, *Bol. Acad. Ciens. Fis. Mat. Nat*. 71, 37-56 (2011).

103. Characterization of a carbon paste electrode modified with tripolyphosphate-modified kaolinite clay for the detection of lead, Y. Gomez, L. Fernandez, C. Borrás, J. Mostany, B. Scharifker, *Talanta* 85, 1357-1363 (2011).

102. Electrochemical nucleation and growth of black and white chromium deposits onto stainless steel surface, M. Aguilar-Sanchez, M. Palomar-Pardavé, M. Romero-Romo, M.T. Ramírez-Silva, E. Barrera, B.R. Scharifker, *J. Electroanal. Chem*. 647, 128-132 (2010).

101. Kinetic study of the electrochemical mineralization of phenols n thin layer condition, R. Vargas, C. Borrás, D. Plana, J. Mostany, B.R. Scharifker, *Electrochim. Acta* 55, 6501-6506 (2010).

100. Electroreduction of chloroacetic acids (mono-, di- and tri-) at polyNi(II-) tetrasulfonate phtalocyanine gold modified electrode, L. Altamar, L. Fernandez, C. Borrás, J. Mostany, H. Carrero, B.R. Scharifker, *Sens. Actuators B Chem*. 146, 103-110 (2010).

99. Measurement of phenols dearomatization via electrolysis: The UV-Vis solid phase extraction method, R. Vargas, C. Borrás, J. Mostany, B.R. Scharifker, *Water Res.* 44, 911-917 (2010).

98. Emulsion electrochemistry: an electrochemical methodology for fuel desulphuration, J. Mostany, B.R. Scharifker, C. Borrás, *Bol. Acad. Ciens. Fis. Mat. Nat*. 69 (4) 9-34 (2010).

97. Three-dimensional nucleation with diffusion-controlled growth: numerical simulation of hierarchical diffusion zones overlap, D. Mazaira, C. Borrás, J. Mostany, B.R. Scharifker, J. *Electroanal. Chem*. 631, 22-28 (2009).

96. Characterization of kaolin glassy carbon modified electrodes: preconcentration of 2-chlorophenol, Y. Gomez, L. Fernandez, C. Borrás, J. Mostany, B.R. Scharifker, *Electroanalysis* 21, 1354-1362 (2009).

95. The current transient for nucleation and diffusion-controlled growth of spherical caps, D. Branco, J. Mostany, C. Borrás, B.R. Scharifker, *J. Solid State Electrochem*. 13, 565-571 (2009).

94. Electrochemical nucleation and the classical theory: overpotential and temperature dependence of the nucleation rate, J. Mostany, B.R. Scharifker, K. Saavedra, C. Borrás, *Elektrokhimiya* 44, 704-711 (2008); *Russ. J. Electrochem*. 44, 652-658 (2008).

93. The development of theoretical models for multiple nucleation with diffusion-controlled three-dimensional growth, D. Mazaira, C. Borrás, J. Mostany, B.R. Scharifker, in *Theoretical and experimental advances in electrodeposition*, L.H. Mendoza-Huizar (Ed.), Research Signpost, Trivandrum, ISBN: 978-81-308-0224-4, 1-24 (2008).

92. Venezuelan students are campaigning for freedom, *Nature* 451, 395 (2008).

91. Diffusion in solids: Hydrogen transport in massive and microdispersed palladium, I.J. Suárez, B.R. Scharifker, J. Mostany, in *Electrochemistry and Materials Engineering*, M.E. Palomar-Pardavé (Ed.), Research Signpost, Trivandrum, ISBN: 978-81-308-0205-3, 173-193 (2007).

90. Study on the influence of forced convection on the copper electrodeposition process, M.G. Montes de Oca, J. Mostany, M. T. Ramírez-Silva, M. Romero-Romo, B.R. Scharifker, M. Palomar-Pardavé, in *Electrochemistry and Materials Engineering*, M.E. Palomar-Pardavé (Ed.), Research Signpost, Trivandrum, ISBN: 978-81-308-0205-3, 93-122 (2007).

89. On the initial stages of electrooxidation of aqueous maleic acid on Bi-doped PbO_2, C. Borrás, A. Monroy, J. Mostany, B.R. Scharifker, *Electroanalysis* 19, 1628-1634 (2007).

88. A comparison of the electrooxidation kinetics of p-methoxyphenol and p-nitrophenol on Sb-doped SnO_2 surfaces: concentration and temperature effects, C. Borrás, C. Berzoy, J. Mostany, J.C. Herrera, B.R. Scharifker, *Appl. Catal. B* 72, 98-104 (2007).

87. Effect of the initial concentration and electrode potential on the kinetics of oxidation and mineralization efficiency of p-nitrophenol on Sb-SnO_2 electrodes, C. Borrás, C. Berzoy, J. Mostany, B.R. Scharifker, *Rev. Cuba. Quim*. 43, 234-235 (2006).

86. Adsorbed states and the kinetics of electrooxidation of phenols on metal oxides, C. Borrás, J. Mostany, B.R. Scharifker, *Ciencia* 14, 149-159 (2006).

85. Oxidation of p-methoxyphenol on SnO_2-Sb_2O_5 electrodes: effects of electrode potential and concentration on the mineralization efficiency, C. Borrás, C. Berzoy, J. Mostany, B.R. Scharifker, *J. Appl. Electrochem*. 36, 433-439 (2006).

84. Oxidation of phenols on metal oxide electrodes, C. Borrás, J. Mostany, B.R. Scharifker, in *Applications of Analytical Chemistry in Environmental Research*, M.E. Palomar-Pardavé (Ed.), Research Signpost, Trivandrum, ISBN 81-308-0057-8, 79-100 (2005).

83. A mechanism for the pre-biotic emergence of proteins. The role of proton gradient and high temperature in the polymerisation of amino acids embedded in bilayers, H.P. De Vladar, R. Cipriani, B. Scharifker, J. Bubis, in *Life in the Universe: From the Miller Experiment to the Search for Life on Other Worlds*, J. Seckbach, J. Chela-Flores, T. Owen and F. Raulin (Eds.), Kluwer, Dordrecht, ISBN 1402023715, 83-88 (2005).

82. Nucleation and diffusion-controlled growth of electroactive centres. Reduction of protons during cobalt electrodeposition. M. Palomar-Pardavé, B.R. Scharifker, E.M. Arce and M. Romero-Romo, *Electrochim. Acta* 50, 4736-4745 (2005).

81. Mechanistic pathways during oxidation of cyanate on platinum single crystal faces, O. Yépez and B.R. Scharifker, *Electrochim. Acta* 50, 1423-1429 (2005).

80. Studies on electrochemical phase formation, B.R. Scharifker, *Bol. Acad. Ciens. Fis. Mat. Nat*. 64, 17-56 (2004).

79. Electrooxidation of aqueous p-methoxyphenol on lead oxide electrodes, C. Borrás, P. Rodriguez, T. Laredo, J. Mostany and B.R. Scharifker, *J. Appl. Electrochem*. 34, 583-589 (2004).

78. Study of the oxidation of solutions of p-chlorophenol and p-nitrophenol on Bi-doped PbO_2 electrodes by UV-Vis and FTIR in-situ spectroscopy, C. Borrás, T. Laredo, J. Mostany and B.R. Scharifker, *Electrochim. Acta* 49, 641-648 (2004).

77. Electrocrystallization of metals with electrocatalytic activity, B.R. Scharifker and J. Mostany, in N. Alonso-Vante (Ed.), *Electrochemistry and Electrocatalysis, Vol. 1a, Materials: fundamental aspects and applications*, e-libro.net, Buenos Aires, pp. 91-141 (2003).

76. Competitive electrochemical oxidation of p-chlorophenol and p-nitrophenol on Bi-doped PbO_2, C. Borras, T. Laredo and B.R. Scharifker, *Electrochim. Acta* 48, 2775-2780 (2003).

75. Electrochemical nucleation and growth, B.R. Scharifker and J. Mostany, in A.J. Bard and M. Stratmann (Eds.), *Encyclopaedia of Electrochemistry*, vol. 2, E.J. Calvo (Ed.), Wiley, New York, pp. 512-540 (2003).

74. Solid oxide fuel cells for direct conversion of hydrocarbons, R. Arenare, C. Borrás, V. Holmquist, T. Laredo and B.R. Scharifker, *Rev. Soc. Ven. Quim*. 26(3), 27-36 (2003).

73. Interactions between high molecular weight poly(ethylene oxide) and sodium dodecyl sulphate, A. Müller, Y. Garcés, M. Torres, B.R. Scharifker and A.E. Sáez, *Progr. Colloid Polym. Sci*. 122, 73-81 (2003).

72. Scientists and the Venezuelan Crisis (with K. Jaffe, R. Di Polo, J. Cardier, R. Ríos, R. Utrera. M. Rodriguez, L. Briceño Zoppi, A.M. Rojas, A. Ponte and M. Bemporad), *Science*, 299, 1184 (2003).

71. Studies on the synthesis of polypyrrole thin films and their insulator-conductor transition, B.R. Scharifker, *Bol. Acad. Ciens. Fis. Mat. Nat*. 61, 67-82 (2001).

70. Oxidation of formate on hydrogen-loaded palladium, O. Yépez and B.R. Scharifker, *Int. J. Hydrogen Energy* 27, 99-105 (2001).

69. Electrodeposition of magnesium from molten salts, A.M. Martinez, B. Børresen, G.M. Haarberg, Y. Castrillejo, B.R. Scharifker and R. Tunold, in *Progress in Molten Salt Chemistry*, Vol. 1, R. W. Berg, H. A. Hjuler (Eds.), Elsevier, 317-323 (2000).

68. In situ FTIR study of redox and overoxidation processes in polypyrrole films, I. Rodriguez, B.R. Scharifker and J. Mostany, *J. Electroanal. Chem*. 491, 117-125 (2000).

67. Catalytic reduction of nitrate during electrodeposition of thallium from Tl3+ solution, B.R. Scharifker, J. Mostany and A. Serruya, *Electrochem. Commun.* 2, 448-451 (2000).

66. Electrochemical phase formation: fundamentals and experiments, B.R. Scharifker, A. Serruya and J. Mostany, *Rev. Soc. Venez. Quím*. 22 (4), 15-21 (2000).

65. Spatial distribution of electrocrystallized nuclei, Abraham Serruya, J. Mostany and B.R. Scharifker, *Tekhné* 3, 39-44 (1999).

64. Reduction of carbon dioxide on modified glassy carbon electrode, R. Hernandez, J. Marquez, O.P. Marquez, M. Choy, C. Ovalles, J.J. Garcia and B.R. Scharifker, *J. Electrochem. Soc*. 146, 4131-4136 (1999).

63. Oxidation of CO on hydrogen-loaded palladium, O. Yépez and B.R. Scharifker, *J. Appl. Electrochem*. 29, 1185-1190 (1999).

62. The kinetics of mercury nucleation from Hg_2^{2+} and Hg^{2+} solutions on vitreous carbon electrodes, A. Serruya, J. Mostany and B.R. Scharifker, *J. Electroanal. Chem*. 464, 39-47 (1999).

61. On the theory of the potentiostatic current transient for diffusion-controlled three-dimensional electrocrystallization processes, B.R. Scharifker, J. Mostany, M. Palomar-Pardavé and I. Gonzalez, *J. Electrochem. Soc*. 146, 1005-1012 (1999).

60. Electrochemical oxidation of 2,3,5,6-tetrafluoroaniline, J.I. Gutierrez, B.R. Scharifker and J. Mostany, *Ciencia* 6, 76-83 (1998).

59. Rotating-cylinder impedance spectroscopy of CO_2-induced corrosion of carbon steels, R. Arenare, B.R. Scharifker and J.R. Vera, *Ciencia* 6, 59-66 (1998).

58. In situ uv-vis reflectance spectroscopy of polypyrrole-polyacrylamide polymer mixtures deposited on gold, Y. Zucaro, J. Mostany and B.R. Scharifker, *Ciencia* 6, 23-31 (1998).

57. Diffusion controlled growth of hemispheres in ordered arrays, B.R. Scharifker, *J. Electroanal. Chem*. 458, 253-255 (1998).

56. Spatial distribution of nuclei. Inhibition of local nucleation rates by the most influential neighbours, E. Garcia-Pastoriza, J. Mostany and B.R. Scharifker, *J. Electroanal. Chem*. 441, 13-18 (1998).

55. Editorial, *J. Braz. Chem. Soc*. 8(2), March/April, 91-193 (1997).

54. Post-academic science, a new way of building knowledge?, *Interciencia* 22(4), 163-165 (1997).

53. Impedance spectroscopy of undoped, doped and overoxidized polypyrrole films, J. Mostany and B.R. Scharifker, *Synth. Met*. 87, 179-185 (1997).

52. Direct microcalorimetric measurement of doping and overoxidation processes in polypyrrole, J. Mostany and B.R. Scharifker, *Electrochim. Acta* 42, 291-301 (1997).

51. Silver electrocrystallization on vitreous carbon from ammonium hydroxide solutions, M. Palomar-Pardavé, M.T. Ramírez, I. Gonzalez, A. Serruya and B.R. Scharifker, *J. Electrochem. Soc*. 143, 1551-1558 (1996).

50. Silver electrocrystallization from a non-polluting aqueous leaching solution containing ammonia and chloride, A. Serruya, B.R. Scharifker, I. Gonzalez, M.T. Oropeza and M. Palomar-Pardavé, *J. Appl. Electrochem*. 26, 451-457 (1996).

49. Upgrading of Orinoco belt crude oil and its fractions by an electrochemical system in the presence of protonating agents, C. Ovalles, I. Rojas, S. Acevedo, G. Escobar, G. Jorge, L.B. Gutierrez, A. Rincon and B. Scharifker, *Fuel Process. Technol*. 48, 159-172 (1996).

48. Changes in population of neutral species and charge carriers during electrochemical oxidation of polypyrrole, D.J. Fermín, H. Teruel and B.R. Scharifker, *J. Electroanal. Chem*. 401, 207-214 (1996).

47. Formation, growth and properties of thin polypyrrole films, B.R. Scharifker, E. García-Pastoriza, J. Mostany, *Rev. LatinAm. Met. Mat*. 15, 32-41 (1995).

46. Spatial distribution of electrodeposited lead nuclei on to vitreous carbon beyond their nearest neighbours, J. Mostany, A. Serruya and B.R. Scharifker, *J. Electroanal. Chem*. 383, 37-41 (1995).

45. The role of intermediates in solution in the initial stages of electrodeposition of polypyrrole, B.R. Scharifker and D.J. Fermín, *J. Electroanal. Chem*. 365, 35-39 (1994).

44. Electronically conducting polymers: Synthesis and electrochemical properties of polypyrrole, D.J. Fermín, J. Mostany and B.R. Scharifker, *Current Topics in Electrochemistry* 2, 131-143 (1993).

43. Formation and growth of polypyrrole films, D.J. Fermín and B.R. Scharifker, *Rev. Iberoamer. Polím*. 2, 17 (1993).

42. Products in solution during electrodeposition of polypyrrole, D. Fermín and B.R. Scharifker, *J. Electroanal. Chem*. 357, 273-287 (1993).

41. Spatial distributions and saturation number densities of lead nuclei deposited on vitreous carbon electrodes, A. Serruya, J. Mostany and B.R. Scharifker, *J. Chem. Soc. Faraday Trans*. 89, 255-261 (1993).

40. New materials and electrocatalytic structures, B.R. Scharifker, *Rev. LatinAm. Met. Mat*. 13, 58-64 (1993).

39. On the spatial distribution of nuclei on electrode surfaces, B.R. Scharifker, J. Mostany and A. Serruya, *Electrochim. Acta* 37, 2503-2510 (1992).

38. Electrodeposition and electrochemical behaviour of palladium particles at polyaniline and polypyrrole films, A. Leone, W. Marino and B.R. Scharifker, *J. Electrochem. Soc*. 139, 438-443 (1992).

37. Microelectrode techniques in electrochemistry, B.R. Scharifker, in *Modern Aspects of Electrochemistry*, No. 22, J.O'M. Bockris, B.E. Conway and R.E. White (Eds.), Plenum Press, New York, 467-519 (1992).

36. Nucleation on active sites, B.R. Scharifker, in: *Electrochemistry in Transition, from the 20th. to the 21st. Century*, O.J. Murphy, S. Srinivasan and B.E. Conway (Eds.), Plenum Press, New York, 499-508 (1992).

35. Statistical study of initial pitting corrosion in 7020 aeronautical aluminium alloy, A. Alvarez, B. Scharifker, G. Mankowski, J. Lira and F. Dabosi, *Rev. LatinAm. Met. Mat*. 11, 46-49 (1991).

34. The growth of polypyrrole films on electrodes, B.R. Scharifker, E. Garcia Pastoriza and W. Marino, *J. Electroanal. Chem*. 300, 85-98 (1991).

33. Ensembles of microelectrodes, B.R. Scharifker, in: *Microelectrodes: Theory and Applications*, M.I. Montenegro, M.A. Queirós and J.L. Daschbach (Eds.), NATO Advanced Study Institutes Series, Series E, Vol. 197, Kluwer Academic Publishers, Dordrecht, 227-239 (1991).

32. Silver clusters adsorbed on platinum, D.C. Alonzo, M.M. Ramírez de Agudelo and B.R. Scharifker, *Rev. Soc. Venez. Catal*. 4, 1-11 (1990).

31. On the underpotential-overpotential transition in the deposition of silver on platinum, D.C. Alonzo and B.R. Scharifker, J. *Electroanal. Chem*. 274, 167-178 (1989).

30. Electrochemical elimination of H_2S, B.R. Scharifker, *Rev. Soc. Venez. Quím*. 12(1), 35 (1989).

29. On the diffusional impedance of microdisc electrodes, L.M. Abrantes, M. Fleischmann, L.M. Peter, S. Pons and B.R. Scharifker, *J. Electroanal. Chem*. 256, 229-233 (1988).

28. The comparison of thermodynamic quantities in adsorption from solution described by different isotherms, B.R. Scharifker and P. Zelenay, *Acta Cient. Venez*. 39, 315-318 (1988).

27. Diffusion to ensembles of microelectrodes, B.R. Scharifker, J. *Electroanal. Chem*. 240, 61-76 (1988).

26. Direct confirmation of the nature of information obtained from FTIR studies of electrodes in solution, B.R. Scharifker, K. Chandrasekaran, M.E. Gamboa-Aldeco, P. Zelenay and J.O'M. Bockris, *Electrochim. Acta* 33, 159-160 (1988).

25. The transport of oxygen in aqueous borate solutions, V. Jovancicevic, P. Zelenay and B.R. Scharifker, *Electrochim. Acta* 32, 1553-1555 (1987).

24. Overlapping concentration distributions at arrays of disk ultramicroelectrodes, B.R. Scharifker, in *Ultramicroelectrodes*, M. Fleischmann, S. Pons, D.R. Rolison and P.P. Schmidt (Eds.), Datatech, Morganton, 316-325 (1987).

23. Concentration and potential dependence of the adsorption of thiourea and thiocyanate on iron surfaces, J.O'M. Bockris, B.R. Scharifker and J.L. Carbajal, *Electrochim. Acta* 32, 799-809 (1987).

22. The kinetics of oxygen reduction in molten phosphoric acid at high temperatures, B.R. Scharifker, P. Zelenay and J.O'M. Bockris, *J. Electrochem. Soc*. 134, 2714-2725 (1987).

21. Adsorbed hydrogen on iron in the electrochemical reduction of protons: an FTIR study, J.O'M. Bockris, J.L. Carbajal, B.R. Scharifker and K. Chandrasekaran, *J. Electrochem. Soc*. 134, 1957-1963 (1987).

20. A comparison of the properties of CF_3SO_3H and H_3PO_4 in relation to fuel cells, P. Zelenay, B.R. Scharifker, J.O'M. Bockris and D. Gervasio, *J. Electrochem. Soc*. 133, 2262-2267 (1986).

19. Adsorption of borate ions on passive iron: an in-situ SNIFTIRS FTIRRAS study, B.R. Scharifker, M.A. Habib, J.L. Carbajal and J.O'M. Bockris, *Surface Sci*. 173, 97-105 (1986).

18. The nucleation of lead from halide containing solutions, J. Mostany, J. Parra and B.R. Scharifker, *J. Appl. Electrochem*. 16, 333-338 (1986).

17. Effect of temperature on the formation of two-dimensional sulphide phases on mercury, C. Benucci and B.R. Scharifker, *J. Electroanal. Chem*. 190, 199-212 (1985).

16. Phase formation phenomena during electrodeposition of benzyl and heptyl viologen bromides, B.R. Scharifker and C. Wehrmann, *J. Electroanal. Chem*. 185, 93-108 (1985).

15. Electrodeposition of lead sulphide, B.R. Scharifker, Z. Ferreira and J. Mozota, *Electrochim. Acta* 30, 677-682 (1985).

14. Three-dimensional nucleation with diffusion-controlled growth. Part II: The nucleation of lead on vitreous carbon, J. Mostany, J. Mozota and B.R. Scharifker, *J. Electroanal. Chem*. 177, 25-37 (1984).

13. Three-dimensional nucleation with diffusion-controlled growth. Part I: Number density of active sites and nucleation rates per site, B.R. Scharifker and J. Mostany, *J. Electroanal. Chem*. 177, 13-23 (1984).

12. Nearest neighbour distribution in three-dimensional nucleation with diffusion-controlled growth: Simulation of the distribution, B.R. Scharifker, *Acta Cient. Venez*. 35, 211-217 (1984).

11. Electrocrystallization of copper sulphide (Cu_2S) on copper, B.R. Scharifker, R. Rugeles and J. Mozota, *Electrochim. Acta* 29, 261-266 (1984).

10. The formation and properties of single nuclei, G.J. Hills, A. Kaveh-Pour and B.R. Scharifker, *Electrochim. Acta*, 28, 891-898 (1983).

9. Theoretical and experimental studies of multiple nucleation, B.R. Scharifker and G.J. Hills, *Electrochim. Acta*, 28, 879-889 (1983).

8. Electrochemical nucleation. Part III: The electrodeposition of mercury on vitreous carbon, G.A. Gunawardena, G.J. Hills, I. Montenegro and B.R. Scharifker, *J. Electroanal. Chem*. 138, 255-271 (1982).

7. Electrochemical nucleation. Part I: General considerations, G.A. Gunawardena, G.J. Hills, I. Montenegro and B.R. Scharifker, *J. Electroanal. Chem*. 138, 225-239 (1982).

6. A potentiostatic study of the nucleation of silver on vitreous carbon, A. Milchev, B.R. Scharifker and G.J. Hills, *J. Electroanal. Chem*. 132, 277-289 (1982).

5. Induction times for the formation of single mercury nuclei on a platinum microelectrode, G.A. Gunawardena, G.J. Hills and B.R. Scharifker, *J. Electroanal. Chem*. 130, 99-112 (1981).

4. Electrochemical kinetics at microscopically small electrodes, B.R. Scharifker and G.J. Hills, *J. Electroanal. Chem*. 130, 81-97 (1981).

3. The nucleation and growth of two-dimensional anodic films under galvanostatic conditions, G.J. Hills, L.M. Peter, B.R. Scharifker and M.I. Da Silva Pereira, *J. Electroanal. Chem*. 124, 247-262 (1981).

2. Electrochemical adsorption and phase formation on mercury in sulphide ion solutions, L.M. Peter, J.D. Reid and B.R. Scharifker, *J. Electroanal. Chem*. 119, 73-91 (1981).

1. Three-dimensional nucleation of lead: a comment on a paper by F. Palmisano et al, G.J. Hills, I. Montenegro and B.R. Scharifker, *J. Appl. Electrochem*. 10, 807-809 (1980).

CONFERENCE PROCEEDINGS

45. TiO2 nanotubes and their application to sensitized solar cells, G. Duran, R. Vargas, S. Blanco, C. Borrás, J. Mostany, B.R. Scharifker, *French-Venezuelan School of Nanotechnology*, 3 pp. (2009).

44. Analysis of the copper electrodeposition current transients in nitrates media, M. Aguilar-Sanchez, M.E. Palomar-Pardavé, S. Corona-Avendaño, M.A. Romero-Romo, M.T. Ramírez-Silva, B.R. Scharifker, J. Mostany, I. Rodriguez-Torres, *ECS Trans.* 20(1), 357-364 (2009).

43. Electroanalytic study of nitrates detection using copper and glassy carbon electrodes modified with copper nuclei, M. Aguilar-Sanchez, S. Corona-Avendaño, M.T. Ramírez-Silva, M.E. Palomar-Pardavé, B.R. Scharifker, J. Mostany, M.A. Romero-Romo, *ECS Trans.* 15(1), 555-561 (2008).

42. Electrochemical characterization of nitrate reduction on recently deposited copper nuclei, M. Aguilar-Sanchez, M.E. Palomar-Pardavé, B.R. Scharifker, J. Mostany, M.T. Ramírez-Silva, M.A. Romero-Romo, *ECS Trans.* 15(1), 371-381 (2008).

41. Electrochemical reduction of nitrate ions catalysed by copper clusters potentiodynamically deposited on vitreous carbon electrodes, M. Aguilar Sanchez, S. Corona Avendaño, G. Montes de Oca Yehma, M. Romero Romo, M.T. Ramírez Silva, B.R. Scharifker, M. Palomar Pardavé, *Proc. 22nd Nnal. Cong. Mex. Soc. Electrochem.*, Pachuca, México, 1617-1623 (2007).

40. Influence of the diffusion layer thickness on the electrochemical nucleation process of silver on vitreous carbon, M.G. Montes de Oca, J. Mostany, M.T. Ramírez Silva, B.R. Scharifker, M. Romero Romo, M. Palomar Pardavé, *Proc. 22nd Nnal. Cong. Mex. Soc. Electrochem.*, Pachuca, México, 1596-1609 (2007).

39. Electrochemical study of copper nucleation with simultaneous reduction of nitrate ions, M.G. Montes de Oca, J. Mostany, M.T. Ramírez Silva, B.R. Scharifker, M. Romero Romo y M. Palomar Pardavé, *Proc. 22nd Nnal. Cong. Mex. Soc. Electrochem.*, Pachuca, México, 1248-1259 (2007).

38. Reduction of nitrate ion on the growing surfaces of Cr nuclei formed during black chromium electrodeposition, M. Aguilar-Sanchez, M. Palomar-Pardavé, M. Romero-Romo, M.T. Ramírez-Silva, E. Barrera, L. Huerta, B.R. Scharifker, in *Electrochemical Surface Science: Recent Advances in the Study of The Electrode-Electrolyte Interface*, M. Soriaga, J. Baricuatro, N. Batina (Eds.), *ECS Trans*. 3(34), 137-146 (2007).

37. Electrodeposition under forced convection conditions, M.G. Montes de Oca Yemha, J.L. Mostany, M.T. Ramírez-Silva, M. Romero-Romo, B.R. Scharifker, M. Palomar-Pardavé, in *Electrochemical Surface Science: Recent Advances in the Study of The Electrode-Electrolyte Interface*, M. Soriaga, J. Baricuatro, N. Batina (Eds.), *ECS Trans.* 3(34), 117-125 (2007).

36. Consistency of the classical theory of nucleation with nanometric phenomena: a comparison from overpotential and temperature studies, K. Saavedra, B.R. Scharifker, J. Mostany, in *Electrochemical Surface Science: Recent Advances in the Study of The Electrode-Electrolyte Interface*, M. Soriaga, J. Baricuatro, N. Batina (Eds.), *ECS Trans*. 3(34), 53-63 (2007).

35. Gathering kinetic data of electrochemical phase formation processes through analysis of experimental current transients. Overview and new approaches, M. Palomar-Pardavé, M. Romero-Romo, , M.T. Ramírez-Silva, J.L. Mostany, B.R. Scharifker, in *Electrochemical Surface Science: Recent Advances in the Study of The Electrode-Electrolyte Interface*, M. Soriaga, J. Baricuatro, N. Batina (Eds.), *ECS Trans*. 3(34), 45-52 (2007).

34. Study on the influence of chloride concentration on copper electrodeposition, M.G. Montes de Oca Yehma, J.L. Mostany, M.T. Ramírez-Silva, M. Romero-Romo, B.R. Scharifker, M. Palomar-Pardavé, in *Electrochemical Surface Science: Recent Advances in the Study of The Electrode-Electrolyte Interface*, M. Soriaga, J. Baricuatro, N. Batina (Eds.), *ECS Trans*. 3(34), 25-34 (2007).

33. Experimental conductimetric, rheological and surface tension study of interactions between poly(ethylene oxide) (PEO) and sodium dodecylsulphate (SDS), Y. Garcés, A.J. Müller, B. Scharifker, A.E. Sáez, *Proc. 10th Nnal. Coll. Polym.*, Maracaibo, Venezuela, 58-59 (2001).

32. Temporal evolution of the surface of nuclei with 3D growth controlled by diffusion and the current associated to redox processes on them. 1. Non-interacting nuclei, M. Palomar-Pardavé, B.R. Scharifker, E.M. Arce, I. Gonzalez and M. Romero Romo, *Proc. 16th Cong. Mex. Soc. Electrochem.*, Querétaro, (2001).

31. Comparative study of adsorption and oxidation processes of thiocyanate on platinum, gold and copper, M.E. Vicioso, C. Borrás, J. Mostany and B.R. Scharifker, *Proc. 5th Venez. Chem. Cong.* (ISBN 980-00-1813-1), Maracaibo, 357-360 (2001).

30. In situ uv-vis reflectance of Pb monolayers on Au, I. Lugo, B.R. Scharifker and J. Mostany, *Proc. 5th Venez. Chem. Cong.* (ISBN 980-00-1813-1), Maracaibo, 332-335 (2001).

29. Electrooxidation of thiophene and derivatives on PbO2 modified electrodes, B.R. Scharifker, C. Borrás, J. Mostany and O. Mejías, *Proc. 5th Venez. Chem. Cong.* (ISBN 980-00-1813-1), Maracaibo, 311-314 (2001).

28. Kinetics of formation and recombination of charge carriers in polypyrrole, B.R. Scharifker e I. Suárez, *Proc. 5th Venez. Chem. Cong.* (ISBN 980-00-1813-1), Maracaibo, 302-305 (2001).

27. Electrochemical oxidation of methoxyphenol on PbO2 electrodes, P. Rodriguez, B.R. Scharifker, J. Mostany and C. Borrás, *Proc. 5th Venez. Chem. Cong.* (ISBN 980-00-1813-1), Maracaibo, 291-294 (2001).

26. Electrochemical measurement of hydrogen adsorption enthalpies on platinum, B.R. Scharifker, J. Mostany and R.J. Buceta, *Proc. 5th Venez. Chem. Cong.* (ISBN 980-00-1813-1), Maracaibo, 284-286 (2001).

25. Electrodeposition of Magnesium from Molten Chlorides, A. M. Martinez, B. Børresen, G. M. Haarberg, R. Tunold, Y. Castrillejo and B.R. Scharifker, *Proc. Jondal 2000 Intnl. Symp.*, C. Rosenkilde (Ed.), Norsk Hydro, Porsgrunn, 27-37 (2001).

24. Spatial Distribution of Electrodeposited Nuclei, B.R. Scharifker, E.G. Pastoriza, J. Mostany, *Proc. Symp. Fundam. Aspects Electrochem. Deposition and Dissolution Including Modeling*, Vol. 97-27, The Electrochemical Society, New Yersey (ISBN 1-56677-180-3), 503-506 (1998).

23. Electrochemical oxidation of 2,3,5,6-tetrafluoroaniline, J.I. Gutierrez, B.R. Scharifker and J. Mostany, *Proc. 10th Nnal Meet. Electrochem.*, Caracas, 179-186 (1998).

22. Hemi-toroidal growth of palladium on carbon fibre microdisks, I. Suárez and B.R. Scharifker, *Proc. 10th Nnal Meet. Electrochem.*, Caracas, 115-127 (1998).

21. Correlations among electrodeposited nuclei, J. Mostany, A. Serruya and B.R. Scharifker, *Proc. 6th Nnal Meet. Electrochem.*, Los Teques, 157-166 (1995).

20. Study on the generation of charge carriers in polypyrrole films, D.J. Fermín and B.R. Scharifker, *Proc. 6th Nnal Meet. Electrochem.*, Los Teques, 139-155 (1995).

19. Reduction of carbon dioxide on platinum at low overpotentials, P. Matheus, J. Marquez, O. Marquez, M. Choy Martinez, J.M. Garnica, C. Ovalles, J.J. Garcia and B.R. Scharifker, *Proc. 6th Nnal Meet. Electrochem.*, Los Teques, 53-60 (1995).

18. Electrochemical reduction of CO2 on steel electrodes, W. Cabrera, J. Marquez, O. Marquez, M. Choy de Martinez, J.M. Garnica, C. Ovalles, J.J. Garcia and B.R. Scharifker, *Proc. 6th Nnal Meet. Electrochem.*, Los Teques, 41-52 (1995).

17. Electrochemical reduction of CO2 on vitreous carbon electrodes, R. Hernandez, J. Marquez, O. Marquez, M. Choy Martinez, J.M. Garnica, C. Ovalles, J.J. Garcia and B.R. Scharifker, *Proc. 6th Nnal Meet. Electrochem.*, Los Teques, 31-40 (1995).

16. Formation and growth of polypyrrole films, D. Fermín and B.R. Scharifker, *Proc. 3rd LatAm. Symp. Polym.*, A. Müller (Ed.), Caracas, 95-100 (1992).

15. Electrochemical reduction of CO2 on electrochemically modified vitreous carbon electrode, R. Hernandez, J. Marquez, O. Marquez, M. Choy Martinez, C. Ovalles, J.J. Garcia and B.R. Scharifker, *Proc. 5th Nnal Meet. Electrochem.*, Mérida, 169-177 (1992).

14. Voltammetric study of the reduction of carbon dioxide on vitreous carbon, P. Matheus, J. Marquez, O. Marquez, M. Choy Martinez, C. Ovalles, J.J. Garcia and B.R. Scharifker, *Proc. 5th Nnal Meet. Electrochem.*, Mérida, 157-167 (1992).

13. Polypyrrole formation: nucleation or precipitation of oligomers?, D. Fermín and B.R. Scharifker, *Proc. 5th Nnal Meet. Electrochem.*, Mérida, 195-209 (1992).

12. Spectrophotometric identification of intermediates during electrooxidation of pyrrole, D. Fermín and B.R. Scharifker, *Proc. 5th Nnal Meet. Electrochem.*, Mérida, 275-290 (1992).

11. Digital simulation of the distribution of nuclei on electrodes, B.R. Scharifker, J. Mostany and A. Serruya, *Proc. 5th Nnal Meet. Electrochem.*, Mérida, 39-54 (1992).

10. In situ microscopic study of the nucleation of lead on vitreous carbon, A. Serruya, J. Mostany and B.R. Scharifker, *Proc. 5th Nnal Meet. Electrochem.*, Mérida, 325-342 (1992).

9. Potentiostatic deposition of Pd on a carbon fibre microelectrode, I.J. Suárez and B.R. Scharifker, *Proc. 4th Nnal Meet. Electrochem.*, USB, Caracas, 371-381 (1991).

8. Microphotographic study of lead nucleation on vitreous carbon, A. Serruya, J. Mostany and B.R. Scharifker, *Proc. 4th Nnal Meet. Electrochem.*, USB, Caracas, 355-369 (1991).

7. Microcalorimetric study of the electrical double-layer, C.L. Ferro and B.R. Scharifker, *Proc. 4th Nnal Meet. Electrochem.*, USB, Caracas, 333-353 (1991).

6. Intermediates during oxidation of pyrrole in aqueous solution, D. Fermín and B.R. Scharifker, *Proc. 4th Nnal Meet. Electrochem.*, USB, Caracas, 235-249 (1991).

5. Conducting polymers: Phase formation and electrocatalytic applications, W. Marino, A. Leone, E. Garcia Pastoriza and B.R. Scharifker, *9th IberoAm. Cong. Electrochem. Plen. Inv. Lect.*, University of La Laguna, Tenerife, Spain, 471-491 (1990).

4. Electroreduction of oxygen on platinum in molten phosphoric acid, P. Zelenay, J.O'M. Bockris and B.R. Scharifker, Electrocatal., *Mater. Symp. Electrochem. Sect. Pol. Chem. Soc., 9th* 1987, P. Nowak (Ed.), Pol. Chem. Soc., Warsaw, 295-306 (1988).

3. Outlook for fundamental research in electrocrystallization, J.O'M. Bockris and B.R. Scharifker, *Proc. Symp. Electrosolidification*, The Electrochemical Society, Pennington, N.J., 1-12 (1986).

2. Electrolysis of hydrogen sulphide in aqueous alkaline solutions, B. Dandapani, B.R. Scharifker and J.O'M. Bockris, *Proc. Electrochem. Soc*. 86-13 (Diaphragms, Separators and Ion-Exchange Membranes), 228-237 (1986).

1. Electrolysis of hydrogen sulphide in aqueous alkaline solutions, B. Dandapani, B.R. Scharifker and J.O'M. Bockris, in *Advancing Toward Technology Breakout in Energy Conversion, Proc. 21st Intersoc. Energy Convers. Eng. Conf*., Vol. 1, 262-265 (1986).

PATENTS OF INVENTION

3. Process to recover vanadium contained in acid solutions, B.R. Scharifker and R. Arenare, *Pat Appl. VE* 2001-1539 (18 July 2001), *Bol. Ofic. Reg. Prop. Ind. Venez*. No. 459 (4 Nov. 2003), *U.S. Pat*. No. 7,498,007 (March 3, 2009).

2. Process to separate the vanadium contained in inorganic acid solutions B.R. Scharifker and R. Arenare, *Pat Appl. VE* 2001-1538 (18 July 2001), *Bol. Ofic. Reg. Prop. Ind. Venez*. No. 459 (4 Nov. 2003); *U.S. Pat*. No. 7,332,141 (February 19, 2008).

1. Electrocatalyst for the oxidation of methane and an electrocatalytic process, B.R. Scharifker, O. Yépez, J.C. De Jesus y M.M. Ramírez de Agudelo, *U.S. Pat*. No. 5,051,156 (1991); *Ger. Offen*. DE 4,040,835 (1991); *CA* 2,026,554 (1991); *GB* 2,261,384 (1993); *JP* 6,065,773 (1994).

OTHER PUBLICATIONS

50. Foreword, *Hydrogen Generation: Fundamentals, Utilization and Future Directions*, R. Vargas (Editor), Nova, New York, in the press (2026).

49. The Earth Trembles: Sciencce, Culture and Memory, in "When the Earth Trembles, Creativity Responds", *Jewish Latin America*, S.A. Sadow, G. Capellin, R. Markus-Finckler (Eds.), 14 Septiember (2026) https://jewishlatinamerica.com/2026/09/14/venezuela-cuando-la-tierra-tiembla-la-creacion-responde-when-the-earth-trembles-creativity-responds-escritores-y-artistas-judio-venezolanos-responden-al-terremoto-del-24-de-junio-de-2026-venezue/.

48. Doors That Do Not Close, epilogue to *Jews and Gentiles: Let's See If We Can Understand Each Other*, by Soledad Morillo Belloso, in preparation (2026).

47. Foreword, *Dictionary of Jewish Culture in Venezuela*, 2nd Edition, Abraham Levi Benshimol, in the press (2026).

46. The urgency of diversifying university financing in Venezuela, *Debates IESA*, 25 July (2025). https://www.debatesiesa.com/la-urgencia-de-diversificar-el-financiamiento-universitario-en-venezuela/

45. A Crystalline Dialog, *Papel literario*, *El Nacional*, 80th Anniversary Edition, p. 4, August 6 (2023).

44. Dialog between Ideas and Facts: The Nature of Scientific Progress, *Papel literario*, *El Nacional*, August 21 (2022).

43. "Kristallnacht" seen from the perpsective that offers the present time, Papel literario, *El Nacional*, November 15 (2017). Reflecting about the future, Verbigracia, *El Universal*, Caracas, December 7 (2017).

42. Reason in the time of post-truth, *El Nacional*, 74th Anniversary Edition, section on science and everyday life, p. 2, September 3 (2017).

41. Academic Freedom Under Threat in Venezuela, A. Jaffé, B. Scharifker, *Scholars At Risk Network*, July 30 (2015) https://www.scholarsatrisk.org/resources/academic-freedom-under-threat-in-venezuela/

40. A government alienated from its obligations on Science, Technology and Innovation, J. Requena, C. Caputo, B. Scharifker, in *On Corruption, Ethics and Development in Venezuela*, National Academies of Venezuela, Caracas, 225-274 (2015).

39. The way towards sustainable development, *Producto* 363, 115, August (2014).

38. Technological energy perspectives and research and development opportunities. Consequences for Venezuela, M. Goldwasser, B. Scharifker, C. Quintini, D. Rojas, E. Buroz, J. Mostany, J.M. Aller, L. Lopez, R. Lairet, in *Reflections and Proposals on Energy*, National Academies of Venezuela, Caracas, 71-288 (2014).

37. The role of research in Venezuelan universities, in C. Bifano (Editor), *From the real university to the possible university*, Academy of Physical, Mathematical and Natural Sciences of Venezuela, Caracas (ISBN: 978-980-6195-31-8), 11-26 (2013).

36. Transforming universities, Final debate, supplement of weekly *6th Power*, Caracas, No. 9, 6, June (2013).

35. Venezuelan universities, between constraints and desires to excel: a necessary discussion, C. Bifano, I. Bonalde, I. de la Vega, A. Machado Allison, J. Mostany, J.L. Paz, V. Rodriguez Lemoine, G. San Blas, B. Scharifker, in *Reflections and Proposals for Higher Education*, National Academies of Venezuela, Caracas (ISBN: 978-9890-6195-26-4), 133-202 (2012).

34. Science, technology and innovation as a cross-cutting issue of society in the 21st century, G. Cunto de San Blas, M. Aguilera, C. Bifano, I. Bonalde, K. Jaffe, S. Levi, J.R. Lopez Padrino, C. Ludeña, C. Machado Allison, R. Marín, V. Mujica, J. Requena, R. Ríos, B. Scharifker, F. Tapia, J. Urbina, H. Vanegas, in *Coordinates for a country: Policies in communication, culture, telecommunications and science, technology and innovation*, M. Bisbal and M.J. Gonzalez (editors), UCAB, Caracas (ISBN: 978-980-244-716-9), 77-92 (2012).

33. The higher education we want, in *Education to transform the country*, L. Ugalde (Editor) et al., UCAB, Caracas (ISBN: 978-980-244-693-3), 181-185 (2012).

32. Visibility and linkage, *Cuadernos Unimetanos* 6(28), 1-4 (2011).

31. How to reconcile the policies for inclusion with quality formation? in *The Venezuelan University in the 21st Century*, UCAB, Caracas (ISBN: 978-980-244678-0), 83-94 (2011).

30. The relevance of science in the development of Venezuela, C. Bifano, J. Requena, I. de la Vega, C. Machado-Allison, Y. Freites, B. Scharifker, A. Machado-Allison, J.L. Paz, J. Mostany, in *Proposals to the Nation*, National Academies of Venezuela, Caracas (ISBN 978-980-336-022-1), 203-240 (2011).

29. Science or revolution, Opinion, *El Nacional*, Caracas, p. A/7, 7 February (2011).

28. Inclusion, pertinence, and quality: a creative equation, in *Latin American University under Discussion*, UCV-IESALC-UNESCO, Caracas (ISBN 978-980-7175-08-1), 349-368 (2010).

27. Response to the incorporation address of Dr. José Luis Paz as member of the Academy of Physical, Mathematical and Natural Sciences, *Bol. Acad. Ciens. Fis. Mat. Nat.* 69, 55-59 (2009).

26. University Reform, Research and Technological Development, in *University Reform, a Challenge for New Times*, Universidad Metropolitana, Caracas (ISBN 978-980-247-154-6), 121-138 (2009).

25. Student May 2007, *El Nacional*, Caracas, A/17, 13 June (2007).

24. Ideas and knowledge need talent, *Analitica Premium*, special number on education, http://www.analitica.com/premium/ 17 September (2006).

23. The density of ideas, Opinion, *El Nacional*, Caracas, A/8, 3 June (2006).

22. Autonomy and Experimentality at Universidad Simon Bolívar, in A. Martucci (editor), *The University Reforms VI*, IESALC-UNESCO, Caracas (ISBN: 980-247-107-0), 31-43 (2006).

21. Who are the actors in the Knowledge Society?, in *Science and Technology in Latin America: a look from Venezuela*, J.M. Cadenas (Editor), CEA-UCV-Fundación Polar, Caracas, 40-44 (2005).

20. Incorporation address at the Academy of Physical, Mathematical and Natural Sciences, *Bol. Acad. Ciens. Fis. Mat. Nat*. 64, 77-83 (2004).

19. Advance of science and higher education: a non-dissociable union, Opinion, *El Universal*, Caracas, 10 December (2001).

18. The role of science in establishing a national identity, in *2nd Symposium on Venezuela: Tradition in Modernity, the Faces of Identity*, C.E. Aleman and F. Fernandez (editors), Equinoccio, Caracas, 547-553 (2001).

17. The science of energy: a tiger in your tank, *Bulletin AsoVAC*, Caracas, (39), 30-33 (2000).

16. World Conference on Science. Science for the 21st Century, a new commitment, *Caribe Info OUI*, No. 4, 3-4, October (1999).

15. Bibliometric analysis of the use of scientific literature at USB, *Carta Semanal*, 26(15), 16-17 (1998).

14. The value of knowledge, Opinion, *El Nacional*, A/5, 15 March (1998).

13. Viergutz and the greenhouse effect, Letter, *El Nacional*, Caracas, A/5, 18 January (1998).

12. Academic evaluation in universities. An alphabet soup, *Bulletin AsoVAC*, Caracas, (35), 22-25 (1997).

11. Venezuelan Science and technology in 2020, *Bulletin AsoVAC*, Caracas, (33), 6-10 (1996).

10. Impact of university research, *Carta Semanal* 24(20), 21-23 (1996).

9. About the impact of research and development, *Carta Semanal* 24(15), 12-14 (1996).

8. Characterization of research at universities. Case studies: evaluation and new proposals, in: *Programs for the stimulus of university research, evaluation and new proposals*, CDCHT, Caracas, 55-66 (1996).

7. Experimental research in Venezuelan universities, in: *Proceedings of the 5th Seminar on Research in Venezuelan Universities*, CDCHT, Caracas, 54-61 (1995).

6. More comments on scientific papers and their credibility, *Rev. Soc. Ven. Quím*., 17(1), 7-8 (1994).

5. The transparency of the Program for the Promotion of Researchers (with F. Garcia Sanchez), *El Diario de Caracas*, 21 May (1994).

4. Fine Chemistry and industrial development (with R. Sanchez), *Investigación & Gerencia*, 10(3), 129-134 (1993).

3. A proposal about the "Venezuelan university problem". *Bulletin APUSB* (1991).

2. Research in Electrochemistry, *Química Hoy*, 2(19), 14-18 (1989).

1. The real economy of energy: hydrogen, *Química Hoy*, 1(1), 31-34 (1988).

LITERATURE CITATIONS

6985, $h = 38$ (Web of Science)
7272, $h = 37$ (Scopus)
10008, $h = 44$ (Google Scholar)
as of November 2025.

INVITED LECTURES

111. Crisis and hope: science facing the challenges of the present, a Venezuelan perspective, *Invited talk*, Oral history session, 23rd Conference on the History of Scientific Thought, Buenos Aires, 2025.

110. Fundamental science and emerging technologies: opportunities and dilemmas to face the challenges of development, *Plenary Conference*, 2nd Scientific Congress, University of Margarita, Nueva Esparta, Venezuela, 2025.

109. The deterioration of science in Venezuela, *Invited presentation*, Analítica Forum, Caracas, 2025.

108. Electrochemistry, Materials and the Challenges of Development, *Plenary Conference*, 40th National Congress of the Mexican Society of Electrochemistry and 18th Meeting of the Mexican Section of the Electrochemical Society, Mexico City, 2025.

107. The foundations for training and learning in the university of the future, *Invited Conference*, Free Chair on the University with Venezuela, Central University of Venezuela, Caracas, 2025.

106. Reforms of the Venezuelan universities for a new style of development, *Invited presentation*, Round Table on Higher Education, Orinoco Group, Caracas, 2024.

105. Why can't we get out of the tunnel? Education, *Invited presentation*, Analítica Forum, Caracas, 2024.

104. The Foundations of the University of the Future, *Invited presentation*, Discussion on the transformation of Simón Bolívar University, USB Alumni Association, Caracas, 2023. *Invited conference*, Postdoctoral Fellowship in Sciences and Philosophy of Education, Andrés Bello Catholic University, Caracas, 2024.

103. Artificial Intelligence: a challenge and above all an opportunity, *Invited talk*, 76th Anniversary Conference of the Caracas Medical Center, on 'AI in modern medicine, pros and cons, realities and myths, ethics and philosophy, Medical Center, Caracas, 2023.

102. Research and Outreach: the foundations of Venezuelan universities in the future, *Invited talk*, Meeting on the future of Venezuelan universities, Merida, 2023.

101. Permanence and Change, *Inaugural lecture* academic year 2022-2023, Monteavila University, Caracas, 2022.

100. Green Hydrogen as alternative energy, *Invited conference*, 10th Meeting on Sustainable Cities, Caracas, 2022.

99. Venezuela, where do we go? *Invited conference*, Ordinary General Assembly, USB Alumni Association, Simon Bolivar University, Caracas, 2022.

98. Chemistry and the challenges for development, *Invited conference*, 40 years of the Venezuela Chemistry Olympiad, Caracas, 2021.

97. Science teaching during the pandemics in the Americas: Impact, challenges and post-Covid projections, *Invited talk*, Interciencia, Costa Rica, 2021.

96. Current challenges for development and the alliance between academic and industrial sectors to face them, *Plenary Conference*, 2nd International Postgraduate Symposium "Science, Innovation and Sustainable development", Technical University of Manabí, Ecuador, 2021.

95. Scientific research and academic freedom: Challenges in Venezuela, *Invited talk*, International Conference on Academic Freedom, towards the development of international standards, Maracaibo, 2021.

94. Strenghtening young leaders for the democratic reconstruction of Venezuela, Del Rosario University, Bogotá, Colombia, 2020.

93. Directing Venezuela to the knowledge society, National Assembly of the Venezuelan Federation of Chambers of Commerce and Production, Fedecamaras, Caracas, 2019.

92. Fluctuations, structures and information: Electrochemical phase formation and applications, Plenary Conference, *23rd Congress of the Iberoamerican Society of Electrochemistry*, Cusco, Peru, 2018.

91. Freedom and the responsibility of scientists, Closing Dinner Conference, *Atlantic Basin Conference on Chemistry*, Cancún, Mexico, 2018.

90. Science and University, Invited talk, Symposium "Frontiers of Science", *66th Annual Conention of the Venezuelan Association for the Advancement of Science*, Caracas, Venezuela, 2016.

89. What we now know about electrocrystallization and what we would like to know about it, Plenary Conference, *29th National Meeting of Electrochemistry*, Caracas, Venezuela, 2016.

88. Our learning of Electrochemistry, Learning 3.0, *13th Ibero American Meeting of the Civil Society*, Caracas, Venezuela, 2016.

87. Science and human rights in Venezuela: a status report, *12th Biennial Meeting, International Human Rights Network of Academies and Scholarly Societies*, Panama, 2016.

86. Research and Education in a technological University, Videoconference, *Meeting on Professoral Research and Innovation*, National Experimental University of Tachira, San Cristóbal, Venezuela, 2016.

85. The future of energy, Plenary Conference, *World Congress on Green Citizenship*, Valencia, Venezuela. 2015.

84. Building capacities for peace, Inaugural lecture, *J.M. Vargas School, Faculty of Medicine, Central University of Venezuela*, Caracas, Venezuela, 2015.

83. The challenge of universities and research institutes, Invited talk, Symposium on "How to restore the intellectual capital of the country", *64th Annual Convention of the Venezuelan Association for the Advancement of Science*, Caracas, Venezuela, 2014.

82. The challenge to universities in building capacities for peace, Opening conference, *64th Annual Convention of the Venezuelan Association for the Advancement of Science*, Caracas, Venezuela, 2014.

81. Rethinking research in Venezuelan universities, Plenary Conference, *8th National Congress and 2nd International Research Congress, University of Carabobo,* Valencia, Venezuela, 2013.

80. Commitment and challenges for university teachers in the 21st Century, *B. Kliksberg Open Chair, National University of Táchira*, San Cristóbal, Venezuela, 2013.

79. The University in Utopia, Invited talk, *TEDXUSB*, Caracas, Venezuela, 2013.

78. Minimal stories: electrochemical phase formation and chemical reactions on nanostructured surfaces, Invited lecture, Symposium on "Science Frontiers", *62nd Annual Convention of the Venezuelan Association for the Advancement of Science*, Caracas, Venezuela, 2012.

77. Thinking the university, sight and perspectives, Invited talk, *3rd Latin American and Caribbean Week*, Simon Bolívar University, Caracas, Venezuela, 2012.

76. Vision on education, Invited lecture, *Venezuelan College of Engineering*, Caracas, Venezuela, 2012.

75. A University for Utopia, Invited lecture, *University of Guayana*, Puerto Ordaz, Venezuela, 2012.

74. Venezuelan Universities: current status and necessary changes, *Discussion on "Education to transform the country", Rafael Urdaneta University*, Maracaibo, Venezuela, 2012.

73. Venezuelan Universities: current status and necessary changes, Invited lecture, *Universidad Centroccidental Lisandro Alvarado*, Barquisimeto, Venezuela, 2012.

72. Science Academies and integration in Latin America and the Caribbean, Invited lecture, *International Seminar on Science and Integration in Latin America, 2nd Latin American and Caribbean week at the Institute of Latin American Studies*, Caracas, Venezuela, 2011.

71. The impact of knowledge on Venezuelan social development, Closing lecture, *4th Meeting on Research and Graduate Studies "Impact of scientific and technological research on society"*, Barquisimeto, Venezuela, 2011.

70. The development of knowledge society, Invited talk, *Symposium "Production of knowledge and public policies for science, technology and innovation", 61st AsoVAC Annual Convention*, Maracay, Venezuela, 2011.

69. Admission to universities, formation with quality, Invited lecture, *International Seminar: Integral formation with social relevance, policies for admission, advancement and graduation in the University transformation agenda*, Maracaibo, Venezuela, 2011.

68. How to reconcile the policies for inclusion with quality formation? Invited lecture, *National Meeting of Universities, the Venezuelan University in the 21st Century*, Caracas, Venezuela, 2011.

67. What science and with whom in the Land of Grace?, Invited talk, *TEDXTierraDeGracia*, Caracas, 2010.

66. Studies concerning the formation and function of nanostructures on electrodes, Keynote lecture, *25th Congress of the Mexican Society of Electrochemistry and 3rd Meeting of the Mexican Section of the Electrochemical Society*, Zacatecas, Mexico, 2010.

65. Public policies in science, Invited lecture, *International Symposium on Production of Knowledge in Academia: Possibilities and Obstacles*, Caracas, Venezuela, 2010.

64. Aspects of the science and nanotechnology of phases on electrodes, Plenary lecture, *23rd National Meeting on Electrochemistry*, Maracaibo, Venezuela, 2010.

63. University and science, Invited lecture, *Cycle of talks on Policy in Science and Technology in Venezuela, Social Responsibility and Academic Networks*, Caracas, Venezuela, 2010.

62. Importance, pertinence and future of graduate studies in the area of the basic sciences, Invited conference, *Ordinary Session No. 66 of the National Council of Universities Authorities for Graduate Study*, Camurí, Venezuela, 2010.

61. Knowledge development and the building of the future, Inaugural lecture, *Doctorate in Materials Science, Universidad de Oriente*, Cumana, Venezuela, 2010.

60. Research, development and innovation in universities, Central conference, *1st Meeting of Researchers at the University of Carabobo*, Valencia, Venezuela, 2009.

59. Current problems in the study of nucleation and diffusion-controlled growth of new phases on electrodes, Keynote lecture, *Electrochem09*, Manchester, UK, 2009.

58. On current issues about science and universities in Venezuela, Invited talk, *Laurie M. Peter 65th birthday Emeritus Professor Celebration*, University of Bath, UK, 2009.

57. Multiple nucleation and diffusion-controlled growth: Theoretical models and experimental findings, Invited lecture, *Institute for Advance Studies, University of Bristol*, UK, 2009.

56. The challenge of education, Invited conference, *Baruta City Council*, Venezuela, 2008.

55. Venezuelan universities and future challenges, Invited conference, *Symposium on Francisco de Venanzi and the Challenges of Universities in the 21st Century, 57th Annual Convention of the Venezuelan Association for the Advancement of Science*, San Cristobal, Venezuela, 2007.

54. Chemistry in Venezuela and the challenges of the future, Inaugural Conference, *8th Congress of the Venezuelan Chemical Society*, Caracas, Venezuela, 2007.

53. Theoretical models for multiple nucleation with diffusion-controlled three-dimensional growth, C. Borrás, D. Mazaira, J. Mostany, B.R. Scharifker, Plenary lecture, *22nd National Congress of the Mexican Society of Electrochemistry*, Pachuca, México (2007).

52. Scenarios on alternative energies, Invited lecture, *Scenarios 2007-2020: World Projections and Challenges for Venezuela, World Future Society*, Caracas, Venezuela, 2007.

51. Formation and catalytic properties of phases on electrodes, invited lecture, *Symposium on Chemistry in the New Millennium, Expo Chem. 2006*, Mayaguez, Puerto Rico, 2006.

50. The role of universities in the Venezuelan future, Invited lecture, *Venezuela Forum 2006: Institutions, Democracy and Development*, Caracas, Venezuela, 2006.

49. Current topics of interest in Electrochemistry: 1. Electrochemical phase formation, 2. Synthesis and properties of conducting polymer films, 3. Anodic oxidation of organic compounds, 4. A prospective view of energy conversion, *Series of invited lectures, Universidad Autónoma del Estado de Hidalgo*, Pachuca, Mexico, 2004.

48. Studies on the electrocrystallisation of metals, nature of the deposits and some pending questions, Invited lecture, *Electrochemistry and Materials Week*, Mexico D.F., Mexico, 2003.

47. Pertinence of university research: the ways of knowledge, Invited lecture, *International Meeting of University Rectors*, Medellin, Colombia, 2003.

46. Electrodeposition of arrays of small metal particles, Plenary lecture, *53rd Annual Meeting of the International Society of Electrochemistry*, Düsseldorf, Germany, 2002.

45. Advances in the study of electrocrystallization, Plenary lecture, *15th Congress of the Ibero-American Society of Electrochemistry*, Évora, Portugal, 2002.

44. Hydrogen in palladium and its effects on the oxidation of organic compounds, Invited lecture, *15th National Meeting on Electrochemistry*, Mérida, Venezuela, 2002.

43. Energetic possibilities in the transition towards the hydrogen economy, Invited lecture, *Future World Society Venezuela*, Caracas, Venezuela, 2002.

42. Generation and transport of charge carriers in polypyrrole: kinetics and mechanism, Invited lecture, *6th Latin-American Conference on Physical Organic Chemistry*, Porlamar, Venezuela, 2001.

41. On the structure of Chemistry graduate programs in Venezuela, Invited lecture, Postgraduate forum, *5th Venezuelan Chemistry Congress*, Maracaibo, Venezuela, 2001.

40. Energetic possibilities: a perspective view on fuel cells, Invited lecture. *1st Symposium of the Venezuelan Association for the Advancement of Technology*, Caracas, Venezuela, 2000.

39. Collective effects and self-organization in the electrochemical formation of phases, Invited lecture. *2nd Interdisciplinary Workshop on Complex Systems*, Valley of Pedro Gonzalez, Margarita, Venezuela, 2000.

38. Discussion leader on 'Fundamentals', *Gordon Research Conference on Electrodeposition*, New London, New Hampshire, U.S.A., 2000.

37. Electrochemical phase formation, Invited Course (15 h), *5th Winter School on Physical Chemistry*, São Carlos, São Paulo, Brazil, 2000.

36. Fundamental aspects of the electrocrystallization of metals. Invited lecture. *Jondal 2000 Symposium on "Fundamentals on Magnesium Electrolysis"*, Jondal, Norway, 2000.

35. Advances in the study of phase formation processes on electrodes. Plenary lecture. *14th Congress of the Ibero-American Society of Electrochemistry*, Oaxaca, Mexico, 2000.

34. Job creation in the science and technology fields, Invited lecture, *Vision of the country: Venezuela in the 21st Century. Presidential Commission on the 5th Centenary of Venezuela*, Caracas, Venezuela, 1999.

33. The insulator-conductor transition in conducting polymers, Invited lecture, *1st Course of the Integrated Graduate School in Chemistry: Supramolecular Chemistry*, Caracas, Venezuela, 1999.

32. Doping and ion exchange in conducting polymers, Invited lecture, *9th National Colloquium on Polymers*, Mérida, Venezuela, 1999.

31. Quality and pertinence of university research, Invited lecture. *6th Seminar on research in national universities*, Maracay, Venezuela, 1999.

30. Energy and sustainable growth, Invited lecture, *Forum on science and energy: fossil fuels and new energy sources*, Caracas, 1999. Also as Invited lecture in the *Cycle on Chemistry and the Environment*, Caracas, Venezuela, 1999, and in *Forum on Research, Science and Sustainable Development: Limitations and Opportunities*, Barquisimeto, Venezuela, 1999.

29. Electrochemical Phase formation, from ions in solution to crystals on surfaces, Invited lecture, *4th Venezuelan Chemistry Congress*, Mérida, Venezuela, 1999.

28. Electrochemical phase formation: fundamentals and experiments, Invited lecture, *Symposium 60 years of the Venezuelan Chemical Society*, Caracas, Venezuela, 1998.

27. Surface electrochemistry, Invited lecture, *Symposium Matter 98*, Caracas, Venezuela, 1998.

26. The role of science in establishing a national identity, Invited lecture, *2nd Symposium on Venezuela: Tradition in Modernity, the Faces of Identity*, Caracas, Venezuela, 1998.

25. Current theoretical and experimental approaches to the study of electrochemical nucleation with diffusion-controlled growth, Invited lecture, *Gordon Research Conference on Electrodeposition*, New London, New Hampshire, U.S.A, 1998.

24. The value of knowledge. Invited lecture, *Faculty of Science and Technology, Lisandro Alvarado Central-Western University*, Barquisimeto, Venezuela, 1998.

23. Hemispherical arrays growing under diffusion control, Plenary lecture, *11th National Meeting on Electrochemistry*, Maracaibo, Venezuela, 1998.

22. Fresh views on the formation, growth, and properties of polypyrrole, an elderly new material. Invited lecture, *Ecóle Polytechnique Fedérale de Lausanne*, Switzerland, 1997.

21. The spatial dimension in electrocrystallisation processes, Inaugural lecture, *Chemistry graduate school, University of Zulia*, Maracaibo, Venezuela, 1996.

20. The spatial dimension and interactions among nuclei in electrocrystallisation processes, Invited lecture, *12th Ibero-American Congress on Electrochemistry, Mérida*, Venezuela, 1996.

19. Formation, growth and properties of thin polypyrrole films on electrodes, B.R. Scharifker, E. Garcia P. and J. Mostany, Invited lecture, *25th Anniversary of USB Symposium on Polymers*, Caracas, 1995.

18. Non-traditional views on a traditional new material: polypyrrole, B.R. Scharifker, Invited lecture, *1st Graduate Workshop on Electrochemistry and Electroanalytical Chemistry, Institute of Chemistry of São Carlos, University of São Paulo*, Brazil, 1995.

17. The spatial dimension in electrocrystallisation processes, B.R. Scharifker, Invited lecture, *18th Annual Meeting of the Brazilian Chemical Society*, Caxambu, Minas Gerais, Brazil, 1995.

16. Recent advances in the study of the insulator-conductor transition of polypyrrole, B.R. Scharifker, D.J. Fermín and J. Mostany, Invited lecture, *45th Meeting of the International Society of Electrochemistry*, Porto, Portugal, 1994.

15. Electrosynthesis and redox properties of polypyrrole films, B.R. Scharifker, Plenary lecture, *9th National Congress on Electrochemistry*, Cuautla, Morelos, Mexico, 1994.

14. Spatial distribution of nuclei deposited on surfaces, B.R. Scharifker, Plenary lecture, *9th National Congress on Electrochemistry*, Cuautla, Morelos, Mexico, 1994.

13. Synthesis and electrochemical properties of polypyrrole, B.R. Scharifker, Invited lecture, *9th Ibero-American Congress on Electrochemistry*, São Paulo, Brazil, 1994.

12. Mechanisms for the formation and growth of polypyrrole films, D.J. Fermín and B.R. Scharifker, Invited lecture, *Ibero-American Symposium on Conducting Polymers: Synthesis and Industrial and Biomedical Applications*, Buenos Aires, Argentina, 1992.

11. Partial oxidation of methane at low temperature and pressure, B.R. Scharifker, O.J. Yépez, J.C. De Jesus, M.M.R. de Agudelo, Invited lecture, *43rd Meeting of the International Society of Electrochemistry*, Córdoba, Argentina, Sept. 20-25, 1992.

10. New materials and electrocatalytic structures, B.R. Scharifker, Invited lecture, *3rd French-Venezuelan Congress on Ceramics and New Materials*, Mérida, Venezuela, 1991.

9. Conducting polymers: Phase formation and electrocatalytic applications, W. Marino, A. Leone, E. Garcia Pastoriza and B.R. Scharifker, Invited lecture, *9th Ibero-American Congress on Electrochemistry*, Tenerife, Spain, 1990.

8. Ensembles of microelectrodes, B.R. Scharifker, Invited lecture, *Microelectrodes: Theory and Applications, NATO Advanced Study Institute*, Alvor, Portugal, 1990.

7. Electrodeposition and electrocatalytic effects of random arrays of ultramicroelectrodes, B.R. Scharifker, Invited lecture, *Universidad de Buenos Aires*, Argentina, 1988.

6. Electrochemical nucleation on active sites, B.R. Scharifker, Invited lecture, *8th Latin-American Meeting on Electrochemistry and Corrosion*, Córdoba, Argentina, 1988.

5. Ensembles of microelectrodes, B.R. Scharifker, Invited lecture, *39th Annual Meeting of the International Society of Electrochemistry*, Glasgow, Scotland, 1988.

4. Nucleation on active sites, B.R. Scharifker, Invited lecture, *Third Chemical Congress of North America*, Toronto, Canada, 1988.

3. Energy conversion in the mitochondria, B.R. Scharifker, Plenary Lecture, *Annual Meeting of the American Academy of Medical Preventics*, Atlanta, Georgia, E.U.A., 1986.

2. Recent advances in electrocrystallization, B.R. Scharifker, Invited lecture, *University of Texas at Austin*, E.U.A., 1986.

1. Two-dimensional phase transitions, B.R. Scharifker, Invited lecture, *Institute of Physical Chemistry, Bulgarian Academy of Sciences*, Sofia, Bulgaria, 1980.

JOURNAL REVIEWER

Academia Green Energy – Academia Materials Science – Academia Molecular Biology and Genomics – Academia Nano: Science, Materials, Technology – ACS Applied Nano Materials – Acta Científica Venezolana – Analytical Chemistry – Applied Catalysis B: Environmental – Avances en Química – Boletín de la Academia de Ciencias Físicas, Matemáticas y Naturales – Chemical Science – ChemElectroChem – ChemPhysPhysChem – Ciencia – Electroanalysis – Electrocatalysis – Electrochemistry Communications – Electrochemical and Solid State Letters – Electrochimica Acta – Fuel Cells – InfoAnalítica (Quito)– Interciencia – International Journal of Electrochemistry – International Journal of Hydrogen Energy – Journal of Applied Electrochemistry – Journal of Colloid and Interface Science – Journal of Electroanalytical Chemistry– Journal of Molecular Liquids – Journal of Solid State Electrochemistry – Journal of the Brazilian Chemical Society – Journal of the Electrochemical Society – Journal of the Mexican Chemical Society – Langmuir – Materials Chemistry and Physics – Nano Letters – Nanoscale – Physica A: Statistical Mechanics and its Applications – Polymer – Portugaliæ Electrochimica Acta – Reaction Chemistry & Engineering – Revista de la Facultad de Ciencias (UNC Medellín)– Revista de la Facultad de Ingeniería UCV – Revista Latinoamericana de Metalurgia y Materiales – Revista de la Sociedad Venezolana de Química – Revista Técnica de Ingeniería LUZ – Scientific Reports – Solid State Ionics – Surface and Coatings Technology – Surfaces and Interfaces – Ultrasonics Sonochemistry – Universidad, Ciencia y Tecnología – The Journal of Physical Chemistry – Thin Solid Films – Water Research.

FUNDING, TECHNICAL REPORTS

21. Studies on electrochemical phase formation, B.R. Scharifker, *Dissertation for incorporation as full member, National Academy of Physical, Mathematical and Natural Sciences*, Caracas, 64 pp. (2004).

20. Recovery of vanadium contained in acid solutions, R. Arenare and B.R. Scharifker, *Technical report PTS-Pentoxido S.A.-ExxonMobil*, Sartenejas, 14 pp. (2000).

19. Studies on the synthesis of polypyrrole thin films and their insulating-conducting transition, B.R. Scharifker, *Dissertation for incorporation as corresponding member, National Academy of Physical, Mathematical and Natural Sciences*, Caracas, 27 pp. (1999).

18. Electrochemical desulfuration of naphthas, E. García Pastoriza, B.R. Scharifker, A. Zapata, I. Suárez, A. Serruya and M. Milo, *Technical report Funindes (USB)-PDVSA-Intevep*, Los Teques (1996).

17. Electrochemical improvement of fuels, I. Suárez, L. Angulo, M. Milo, B.R. Scharifker and E. Garcia Pastoriza, *Technical report Funindes (USB)-PDVSA-Intevep*, Los Teques, 119 pp. (1994).

16. Studies of the spatial distribution of nuclei on electrodes, B.R. Scharifker, *Final Report, CONICIT Grant No. S1-1998*, Caracas, 153 pp. (1993).

15. Electrochemical improvement of Diesel fuel, E. Garcia Pastoriza, B.R. Scharifker, D. Fermín and M. Milo, *Technical report Funindes (USB)-PDVSA-Intevep*, Los Teques, 93 pp. (1992).

14. Direct conversion of methane. Electrochemical conversion of methane to methanol: Chemically modified electrodes, B. Scharifker, V. Baez and F. Rosa, *Technical Report INT-02360, 91, PDVSA-Intevep*, Los Teques, 60 pp. (1990).

13. Direct conversion of methane. Electrochemical conversion of methane to methanol: Palladium as electrode, B. Scharifker, V. Baez and F. Rosa, *Technical Report INT-02359, 91, PDVSA-Intevep*, Los Teques, 31 pp. (1990).

12. Direct conversion of methane. Electrochemical conversion of methane to methanol: Platinum as electrode, B. Scharifker, V. Baez and F. Rosa, *Technical Report INT-02358, 91, PDVSA-Intevep*, Los Teques, 21 pp. (1990).

11. Direct conversion of methane. Electrochemical conversion of methane to methanol: Analytical methods, B. Scharifker, V. Baez and F. Rosa, *Technical Report INT-02357, 91, PDVSA-Intevep*, Los Teques, 13 pp. (1990).

10. Direct conversion of methane. Electrochemical conversion of methane to methanol: Porous electrodes, B. Scharifker, V. Baez and F. Rosa, *Technical Report INT-02356, 91, PDVSA-Intevep*, Los Teques, 13 pp. (1990).

9. Direct conversion of methane. Electrochemical conversion of methane to methanol: Hydrogen in palladium, B. Scharifker, V. Baez and F. Rosa, *Technical Report INT-02355.91, PDVSA-Intevep*, Los Teques, 56 pp. (1990).

8. Direct conversion of methane. Electrochemical conversion of methane to methanol: Analytical methods, M.M. Ramírez de Agudelo, B. Scharifker, J. Salazar, M. Milo and J.C. De Jesus, *Technical Report INT-02017,88, PDVSA-Intevep*, Los Teques, 17 pp. (1988).

7. Direct conversion of methane. Electrochemical conversion of methane to methanol: Chemically modified electrodes, M.M. Ramírez de Agudelo, B. Scharifker, J. Salazar, M. Milo, A. Leone and W. Marino, *Technical Report INT-02016, 88, PDVSA-Intevep*, Los Teques, 42 pp. (1988).

6. Direct conversion of methane. Electrochemical conversion of methane to methanol: Palladium as electrode, M.M. Ramírez de Agudelo, B. Scharifker, J. Salazar, M. Milo, O. Yépez and J.C. De Jesus, *Technical Report INT-02015,88, PDVSA-Intevep*, Los Teques, 34 pp. (1988).

5. Direct conversion of methane. Electrochemical conversion of methane to methanol: Effects of adatoms on Pt, M.M. Ramírez de Agudelo, B. Scharifker, J. Salazar, M. Milo and D. Alonso, *Technical Report INT-02014, 88, PDVSA-Intevep*, Los Teques, 26 pp. (1988).

4. Direct conversion of methane. Electrochemical conversion of methane to methanol: Pt as electrode, M.M. Ramírez de Agudelo, B. Scharifker, J. Salazar, M. Milo, O. Yépez and A. Pedraza, *Technical Report INT-02013,88, PDVSA-Intevep*, Los Teques, 33 pp. (1988).

3. Theoretical and experimental aspects of microelectrodes, B.R. Scharifker, *Full Professor Dissertation, Simon Bolivar University*, Sartenejas, 105 pp. (1988).

2. Nucleation and phase formation on electrodes, B.R. Scharifker, *Final Report, CONICIT Grant No. S1-1227*, Caracas, 208 pp. (1985).

1. Electrochemical three-dimensional multiple nucleation, B.R. Scharifker, *Associate Professor Dissertation, Simon Bolivar University*, Sartenejas, 131 pp. (1983).