

Federico José Williams

Curriculum Vitae

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Datos Personales

Lugar de Nacimiento: La Plata, Argentina

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Posiciones

Marzo 2007–. Profesor Adjunto, Departamento de Química Inorgánica, Analítica y Química Física, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires.

Enero 2006–. Investigador del Consejo Nacional de Investigaciones Científicas y Técnicas CONICET, categoría: Independiente.

Enero 2006–Septiembre 2009. Director del Departamento de Química de Superficies, Centro de Investigación y Desarrollo, Tenaris Siderca.

Octubre 2001–Julio 2005. Director de Estudios en Química, Kings College, University of Cambridge.

Estudios Universitarios

1997–2001. PhD, Chemistry Department, University of Cambridge, United Kingdom.

1991–1996. Licenciado en Química, Universidad Nacional de Mar del Plata, Argentina.

Becas Posdoctorales

Octubre 2003–Julio 2005. Early Career Fellowship, Leverhulme Trust, Department of Chemistry, University of Cambridge.

Octubre 2000–Octubre 2003. Oppenheimer Research Fellowship, Department of Chemistry, University of Cambridge.

Subsidios de Investigación

Abril 2014–Abril 2015. Estudios de la metalación y desmetalación de porfirinas mediada por superficies. Proyecto: DA/13/07. Director: Federico Williams. Programa de Cooperación Científico-Tecnológica entre el Ministerio de Ciencia, Tecnología e Innovación Productiva de la República Argentina (MINCYT) y el Deutscher Akademischer Austausch Dienst (DAAD) de Alemania.

Octubre 2012–Abril 2014. Estudios sobre la interacción de nanopartículas metálicas con membranas biomiméticas construídas sobre soportes sólidos. Proyecto: PICT 2011 Nro 2062. Director: Federico Williams. Entidad: Agencia Nacional de Promoción Científica y Tecnológica. Monto: 120.000 AR\$.

Abril 2010–Abril 2014. Desarrollo de nanosensores químicos y recubrimientos inteligentes para el reconocimiento selectivo y detección temprana de analitos de interés ambiental e industrial. Proyecto: PIP 11220090101031. Director: Federico Williams. Entidad: CONICET. Monto: 300.000 AR\$.

Octubre 2010–Octubre 2012. Estudio de recubrimientos nanoestructurados para la funcionalización de superficies metálicas. Proyecto: UBA-CyT 2010-2012 20020090300139. Director: Federico Williams. Entidad: Universidad de Buenos Aires. Monto: 12.000 AR\$.

Distinciones

2013. Premio Ranwel Caputto en Ciencias Químicas en las áreas de Fisicoquímica y Química Inorgánica. Academia Nacional de Ciencias.
2009. Premio Estímulo en Química 2009. Academia Nacional de Ciencias Exactas Físicas y Naturales (ANCEFN).
2008. Premio Innovar 2008 Categoría Investigación Aplicada. Nanocatalizadores, M. Vago, M. Tagliazucchi, F. J. Williams y E. J. Calvo, Ministerio de Ciencia, Tecnología e Innovación Productiva.

Publicaciones

80. C. M. Aldao, F. Schipani, M. Ponce, E. Joanni, F. J. Williams, "Conductivity in SnO₂ polycrystalline thick film gas sensors: Tunneling electron transport and oxygen diffusion", *Sensors and Actuators B: Chemical* **2014**, 193, 428–433.
79. E. de la Llave, S. E. Herrera, L. P. Méndez De Leo, F. J. Williams, "Molecular and Electronic Structure of Self-Assembled Monolayers Containing Ruthenium(II) Complexes on Gold Surfaces", *Journal of Physical Chemistry C* **2014**, 118, 2142021427.
78. E. de la Llave, R. Clarenc, D. J. Schiffrin, F. J. Williams, "Organization of Alkane Amines on a Gold Surface: Structure, Surface Dipole, and Electron Transfer", *Journal of Physical Chemistry C* **2014**, 118, 468–475.
77. F. Schipani, M. Ponce, E. Joanni, F. J. Williams, C. M. Aldao, "Study of the oxygen vacancies changes in SnO₂ polycrystalline thick films using impedance and photoemission spectroscopies", *Journal of Applied Physics* **2014**, in press.
76. P. Scodeller, F. J. Williams, E. J. Calvo, "XPS Analysis of Enzyme and mediator at the Surface of a Layer-by-Layer Self Assembled Wired Enzyme Electrode", *Analytical Chemistry* **2014**, in press, DOI 10.1021/ac503147c.
75. E. Völker, F. J. Williams, T. Jacob, D. J. Schiffrin, "ARXPS and DFT studies of thermally induced Pb surface segregation on Au/Cu alloys", *Journal of Alloys and Compounds* **2014**, 586, 475–478.
74. D. A. Capdevila, W. A. Marmisollé, F. J. Williams, D. H. Murgida, "Phosphate mediated adsorption and electron transfer of cytochrome c. A time-resolved SERR spectroelectrochemical study", *Physical Chemistry Chemical Physics* **2013**, 15, 5386–5394.
73. E. A. Franceschini, M. A. Bruno, F. J. Williams, F. A. Viva, H. R. Corti, "High-Activity Mesoporous Pt/Ru Catalysts for Methanol Oxidation", *ACS Applied Materials and Interfaces* **2013**, 5, 10437–10444.
72. W. A. Marmisollé, D. A. Capdevila, E. De La Llave, F. J. Williams, D. H. Murgida, "Self-assembled monolayers of NH₂-terminated thiolates: Order, pK_a, and specific adsorption", *Langmuir* **2013**, 29, 5351–5359.
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57. A Calvo, M Joselevich, G. Soler-Illia, F. J. Williams, "Chemical reactivity of amino-functionalized mesoporous silica thin films obtained by co-condensation and post-grafting routes", *Microporous and Mesoporous Materials* **2009**, 121, 67–72.
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- tion of "allylic" alkenes: Structure and reactivity of three phenylpropene isomers on Cu(111)", *Journal of the American Chemical Society* **2005**, 127, 17007–17011.
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25. F. J. Williams, D. P. C. Bird, E Charles, H Sykes, A. K. Santra, R. M. Lambert, "Molecular conformation of styrene on Ag(100): Relevance to an understanding of the catalytic epoxidation of terminal alkenes", *Journal of Physical Chemistry B* **2003**, 107, 3824–3828.
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Patentes

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2. US Patent US 8257572 B2, European Patent Application 2268854A0, Solicitud Patente Argentina 071101 A1, Method for electrochemical plating and marking of metals, Pablo Castro and Federico J. Williams, 1 Octubre 2009. Company: Tenaris Connections AG.
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Conferencias dictadas por invitación

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7. Electroreducción de CO₂, XVIII Congreso Argentino de Fisicoquímica y Química Inorgánica, Rosario, Argentina, 9-12 Abril 2013.
6. Estudios de autoensamblados moleculares sobre superficies metálicas, XII Encuentro de Superficies y Materiales Nanoestructurados, Córdoba, Argentina, 2012.
5. Estudios de autoensamblados moleculares: generación de sitios catalíticos, fluorescentes y redox, V Encuentro de Física y Química de Superficies, Rosario, Argentina, 27-29 Octubre 2011.
4. RML inspired research in surface chemistry: endowing new properties to surfaces, Boston, USA, Fall Meeting American Chemical Society, 22-26 Agosto 2010.
3. Nanocatalizadores de Pd para la hidrogenación enantioselectiva de moléculas proquirales, X Encuentro de Superficies y Materiales Nanoestructurados, San Carlos de Bariloche, Argentina, 2010.
2. Electrodeposición de nanocatalizadores de Pd mediante el confinamiento de iones y su uso en la hidrogenación enantioselectiva de moléculas proquirales, Buenos Aires, Argentina, XVI Congreso Argentino de Catálisis, 3-7 Agosto 2009.
1. Critical influence of adsorption geometry in the heterogeneous epoxidation of allylic alkenes, II Encuentro de Física y Química de Superficies, Vaquerías, Córdoba, Argentina, 18-20 Mayo 2006.

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33. Florencia Marchini, Ernesto J. Calvo and Federico J. Williams, Espectroscopías fotoelectrónicas de reacciones redox de Li-O₂ utilizando una celda electroquímica acoplada a un sistema de UHV, XXI Congreso de la Sociedad Iberoamericana de Electroquímica, La Serena, Chile, 6-11 Abril 2014.
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Tesis Doctorales Dirigidas

2013– Desarrollo de un método y dispositivo electroquímico para la recuperación de litio a partir de salmueras naturales, Florencia Marchini, (dirección conjunta con Ernesto J. Calvo), Universidad de Buenos Aires.

2007–2013. Electrodo modificados y sus aplicaciones en electrocatálisis, Edgar Völker, (dirección conjunta con David J. Schiffrin), Calificación: 10 Sobresaliente, Universidad de Buenos Aires.

2007–2010. Recubrimientos nanoporosos conteniendo funciones orgánicas: superficies con química modulable, Alejandra Calvo (dirección conjunta con Galo Soler-Illia), Calificación: 10 Sobresaliente. Universidad de Nacional de San Martín. Premio Hans Schumacher a la mejor tesis doctoral en fisicoquímica en Argentina en el período 2010-2012.

Becarios Posdoctorales Dirigidos

Abril 2012–Abril 2014. Funcionalización de superficies con monocapas moleculares basadas en la unión covalente C-metal obtenidas por métodos novedosos, Dr. Ezequiel de la Llave, Beca Posdoctoral, CONICET.

Agosto 2010–Abril 2011. Funcionalización de superficies y caracterización mediante estudios electroquímicos y espectroscopías electrónicas, Dra. Alejandra Ricci, Beca Posdoctoral, Agencia.

Gestión Académica

Enero 2012–. Vicedirector Instituto de Química Física de los Materiales Medio Ambiente y Energía INQUIMAE.

Agosto 2011–. Miembro titular de la comisión asesora de Rayos X del Ministerio de Ciencia, Tecnología e innovación productiva MINCyT.

Marzo 2010–. Miembro del consejo de dirección del INQUIMAE.

Julio 2010–Enero 2012. Miembro de la subcomisión de doctorado del DQIAyQF.

Mayo 2007–Diciembre 2008. Miembro titular de la comisión asesora de tecnología del CONICET.

Divulgación Científica

Octubre 2011–. Asesor Científico de las Series Documentales Caminos I, Caminos II, Objetivo Tec y Árbol de la Ciencia producidas para TecTV.

Servicios Técnicos

Marzo 2010–Septiembre 2010. Mejora del proceso de electrogalvanizado en las plantas de Cedar Springs y Lousville: determinación del origen fisicoquímico del fenómeno PTD. Director: F. J. Williams. STAN CONICET. Monto: 15.000 AR\$. Empresa: Siderca SAIC.

Mayo 2011–Junio 2011. Análisis fisicoquímico de superficies de TiN y ZrN. Director: F. J. Williams. STAN CONICET. Monto: 6.450 AR\$. Empresa: FV.

Abril 2012 Análisis mediante espectroscopías fotoelectrónicas de rayos X. Director: F. J. Williams. STAN CONICET. Monto: 5.000 AR\$. Empresa: Siderca SAIC.