

Curriculum Vitae

Juan Pablo Esquivel Bojorquez, Ph.D.

CSIC Tenured Scientist

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Co-founder and Scientific Advisor

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juanpabloeb

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Academic Degrees

2010 – PhD in Electronics Engineering, Universidad Autónoma de Barcelona, Spain
2008 – MSc in Micro and Nanoelectronics, Universidad Autónoma de Barcelona, Spain
2005 – BSc in Mechatronics Engineering, Tecnológico de Monterrey, Mexico

Other studies

2012 – U2B: From University to Business. Start-up Management, Universidad Autónoma de Barcelona, Spain
2003 – International Student Exchange Program, Helsinki University of Technology, Finland

Professional activities

2017 – Present: CSIC Tenured Scientist, IMB-CNM (CSIC), Barcelona, Spain
2016 – 2017: Marie Curie Fellow Researcher, IMB-CNM (CSIC), Barcelona, Spain
2013 – 2016: Senior Fellow Researcher, University of Washington, Seattle, USA
2010 – 2013: Postdoctoral researcher, IMB-CNM (CSIC), Barcelona, Spain
August-December 2004: Research assistant, Tecnológico de Monterrey, Mexico

Entrepreneurial activities

September 2015 - Present: Co-founder and scientific advisor, Fuelium, S.L., Barcelona, Spain

Fields of Competence

Micro fuel cells, biodegradable batteries, paper microfluidics, organic electronics, circular economy

Executive summary of scientific production and impact

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|------------------------------------|--|
| total number of publications | 48 |
| patents | 12 |
| number of conference contributions | 71 (44 oral presentations, 19 presented himself) |
| total number of ISI-citations | 956 (839 without self-citations) |
| h index | 19 (17 without self-citations) |

Distinctions & Awards

- Innovadores 2020, Tec Review, Mexico, Jul 2020
- Best Prototype / New Product, OE-A Competition 2019, Munich, Germany, Mar 2019
- Best Prototype / New Product, OE-A Competition 2018, Munich, Germany, Mar 2018
- Premi Catalunya D'Ecodisseny 2017, ARC, Generalitat de Catalunya, Oct 2017
- Science for Solving Society's Problems Challenge, Bill & Melinda Gates Foundation / ECS, Oct 2014
- TR35 Mexico - MIT's Technology Review, May 2012
- National Researcher Level 1 - SNI (Conacyt), Mexico, 2011
- Outstanding PhD thesis - Universidad Autónoma de Barcelona, Spain, 2010
- *Cum Laude*, European Doctorate Mention - Universidad Autónoma de Barcelona, Spain, 2010
- *Magna Cum Laude*, Bachelor of Science - Tecnológico de Monterrey, México, 2005

Fellowships

- Marie Curie International Outgoing Fellowship
7th European Community Framework Programme, August 2013
- Santander Young Researchers Fellowship
Banco Santander, Spain, July 2011
- Research training JAE program scholarship
National Ministry of Science and Innovation (MICINN), Spain, October 2009

- Mobility fellowship for obtaining European Doctorate Mention
National Ministry of Science and Innovation (MICINN), Spain, July 2009
- Doctoral student scholarship
National Council on Science and Technology (Conacyt), Mexico, September 2006

Language Skills

- Spanish, English, German, Catalan, Basque

Organizational skills

Host coordinator – OE-A Meeting Europe, Barcelona, Spain, 2019
Coordinator - Symposium bioMEMS, Monterrey, México, 2005
Coordinator - Symposium de Microsistemas, Monterrey, México, 2004

Visiting Fellowships

2011 Jul-Sep · Centro de Investigación y Desarrollo Tecnológico en Electroquímica, Querétaro, Mexico
Characterization of polymeric microfluidic fuel cells

2010 Jul-Aug · Helmholtz Zentrum Berlin für Materialien und Energie, Berlin, Germany
Design and fabrication of micro fuel cell-powered microfluidic platform

2009 Jul-Sep · Helmholtz Zentrum Berlin für Materialien und Energie, Berlin, Germany
Development of micro fuel cells with polymer micro and nanostructuring

Research Projects Participation

Disposable Paper Electronic Devices for Sustainable Eco-friendly Platforms (ECOTRONIC)
Jan 2019 – Dec 2022, Spanish Ministry of Science and Innovation, MICINN RTI2018-102070-B-C21

PowerPAD: Biodegradable redox paper fuel cell
Nov 2014 – Oct 2015, Electrochemical Society and Bill and Melinda Gates Foundation

Autonomous Paper-based Point-of-Care Biosensing System (APPOCS)
Aug 2013 – Feb 2017, Marie Curie International Outgoing Fellowship, European Community FP7

Desarrollo de micro pilas de combustible monolíticas basadas en tecnologías de silicio (MPILA)
Oct 2007 – Sep 2009, Spanish Ministry of Science and Innovation, MEC TEC-2007-64669

Microtechnology-based fuel Cells for Ambient intelligence and Low power Applications (MICAELA)
Oct 2009 – Sep 2012, Spanish Ministry of Science and Innovation, MICINN-TEC2009-14660-C02-01

Selected scientific publications

Biopolymer Electrolyte Membranes (BioPEMs) for Sustainable Primary Redox Batteries
P. Alday, S.C. Barros, R. Alves, J.M.S.S. Esperança, M. Navarro-Segarra, N. Sabaté, M.M. Silva, J.P. Esquivel
Advanced Sustainable Systems 4 (2020) 1900110 – **JOURNAL FRONT COVER**

A Metal-Free and Biotically Degradable Battery for Portable Single-Use Applications
J.P. Esquivel, P. Alday, O.A. Ibrahim, B. Fernández, E. Kjeang, N. Sabaté
Advanced Energy Materials (2017) 201700275

Microfluidic fuel cells on paper: meeting the power needs of next generation lateral flow devices
J.P. Esquivel, J. Del Campo, J.L. de la Fuente, S. Rojas and N. Sabaté
Energy and Environmental Science 7 (2014) 1744-1749 **Featured in Science Magazine, Chemistry World**

Fuel cell-powered microfluidic platform for Lab-on-a-Chip applications
J.P. Esquivel, M. Castellarnau, T. Senn, B. Löchel, J. Samitier, N. Sabaté
Lab Chip 12 (2012) 74-79 – **JOURNAL FRONT COVER, Featured in Chemistry World, TOP 10 Most accessed articles Nov 2011**

Selected Patents

J.P. Esquivel, N. Sabaté, M. Castellarnau, S. Gassó
A multi-layered band and a method for manufacturing a multi-layered band, PCT/EP2019/062134, May 2018

J.P. Esquivel, N. Sabaté, F.J. Del Campo, J. Buser
Dispositivo generador eléctrico que incorpora una pila de combustible, PCT/2016070221, March 2015

N. Sabaté, J.P. Esquivel
Fuel cell and analysis device that comprise it, PCT/EP2013/062718, June 2012