

Education and Qualifications

2008 – 2013 **PhD in Chemical Engineering**
Imperial College London, UK
Thesis: Thin Film Composite membranes by interfacial polymerization for Organic Solvent Nanofiltration, supervised by Prof. A. Livingston.

- Marie Curie Fellow as part of the NEMOPUR project, focused on the development of novel polymeric nanomaterials for new molecular purification techniques for pharmaceuticals. Have collaborated with Nine European institutions as part of an industry-academia network.
- Have developed and prepared novel polymeric Thin Film Composite membranes by interfacial polymerization for water and organic solvent nanofiltration. Have studied and characterized the nanomaterials developed using microscopy and physico-chemical characterization techniques.
- Collaborated with GSK, Merck and Lonza to purify active pharmaceutical ingredients using the membranes developed during the PhD as a proof of concept.
- Have achieved research outcomes including, two patent applications, both of which have been licensed, several peer-reviewed articles in international scientific journals, a book chapter, participation in eleven international conferences, with eleven oral presentations and six posters, and participation in two UK symposiums as a speaker and awarded the first prize for oral presentation on both symposiums.
- Proposed, supervised and coordinated six research projects for PhD, MSc and BSc students.
- Attended different courses and international workshops in membranes, polymer nanostructured materials, business development, design of experiments, and pharmaceutical purification.
- Scaled up the membranes developed throughout the PhD to make them a commercial product.

2007 – 2008 **MRes in Green Chemistry, Energy and the Environment with Distinction**
Imperial College London, UK
Thesis: Reverse Osmosis water purification membranes through supramolecular structuring, supervised by Dr. J. Steinke, Department of Chemistry, Imperial College London.

- Undertook a year of research in the laboratory developing nanostructured membranes.

2003 – 2007 **BScHons in Chemistry, first class degree with Distinction**
National Autonomous University Mexico (UNAM), Mexico
Thesis: Synthesis and study on radical formation of diphenyloctatetrayne polymer, supervised by Prof. Takeshi Ogawa, Materials Research Institute, UNAM, Mexico.

- Undertook a year of research in the laboratory developing ferromagnetic polymers.
- Spent six months at UC Berkeley as an exchange student.
- BSc achievements include two peer-reviewed articles in international scientific journals.

Research experience

2013 – present **Postdoctoral Researcher Associate, Imperial College London**, working on a project sponsored by Evonik MET Ltd. Research is focused on further development of the science and engineering of the membranes and nanomaterials developed during my PhD. Working as a part-time consultant with Imperial Consultants on coating techniques.

2012 **Research visitor** for three months at **GVS Filter Technology**, Bologna, Italy. Research focused on development of novel medical filters and polymeric membranes.

2008 – 2012 **Early stage researcher then Research Assistant, Imperial College London**. Worked for first three years on my PhD project as a Marie Curie fellow and last year on a collaboration with other members of my group on three different projects (two peer-reviewed articles):

- Formation of ultrathin film membranes made of a polymer with intrinsic microporosity,
- Translating the techniques patented during my PhD for water desalination,
- Achievements include several peer-reviewed articles in international scientific journals.

- 2005 – 2006 **Honors research student**, Inorganic Chemistry Department, **Berkeley University of California**. Six months research project on synthesis of inorganic electronic polymeric materials containing silane.
- 2004 – 2005 **Intern** for one year, Biomedical Institute, Immunology, **UNAM**, Mexico. Research project on Role of Jak3 in CCR7 signaling and T lymphocyte homing to secondary lymphoid organs.
- 2001 **Participant, International Summer Science Institute (ISSI)**, a prestigious four-week summer program, Weizmann Institute, Israel. Project: Structure Function Study of the Antimicrobial Peptide: Polymyxin B.

Innovation and Business experience

- 2010 – 2011 **Participated in the Design London fellowship Program**, Imperial College London and the Royal College of Arts. Only 37 fellows accepted per year.
- Entrepreneurship, Innovation and Design ten months program as part of the MBA course.
 - Developed a positive business case for a point of care platform technology.
- 2009 **Participated in a Business Development course and competition**, Porto, Portugal. Thirty participants submitted a business idea related to membranes and only 5 ideas were selected.
- My business idea was one of the ideas selected, and I was the leader of the winning team.

Awards

- 2014 **NAMS Young Membrane Scientist Award**, given by the North American Membrane Society for outstanding research in membrane science and technology. Invited speaker in a special awards session during the NAMS 2014 conference.
- 2014 **First Prize for Membrane Synthesis poster** competition at the NAMS 2014 conference.
- 2013 **Weinberg Prize**, Department of Chemical Engineering, Imperial College London, given for outstanding work, ingenuity, originality and elegance during PhD research.
- 2013 **Armstrong Medal and Prize**, Imperial College London, given to one PhD student over the whole university for outstanding research on the application of scientific methods to industrial problems during their PhD.
- 2011 **First prize for oral presentation** in the annual research event organized by IChemE: "What's new in Fluid Separations?" London, UK.
- 2011 **First prize for oral presentation** in the Chemical Engineering PhD Research Symposium 2011, Imperial College London, UK.
- 2010 **Design London Fellowship**, Imperial College London to join its prestigious MBA course, Innovation, Entrepreneurship and Design.
- 2008 **PhD scholarship** - Marie Curie Fellowship Early Stage Researcher.
- 2008 **Green Chemistry Prize** awarded for best overall achievement in MRes studies.
- 2007 **MRes excellence scholarship** funded by CONACYT (Mexican government).
- 2005 **Excellence scholarship** to study at the University of California Berkeley.
- 2001 **International Summer Science Institute (ISSI) scholarship**, Weizmann Institute (Israel).

Additional skills

- **Sub-warden at William Temple House** international student residence, responsibilities include: pastoral care and discipline of students, being a fire marshal, organizing events, gardening (2014).
- **Membrane formation asset manager**, Separation Tech. group, Imperial College London (2012- present).
- **First aider** (First aid at work qualification awarded 2010 and 2013).
- **Separation Technology and Engineering group Safety Officer**, Imperial College (2010-2012).
- **Safety PhD Representative**, Department of Chem. Eng., Imperial College (2010-2012).
- **Member of the PhD committee**, Department of Chem. Eng., Imperial College (2008-2011).
- **Team Member of Imperial College Belly dancing troupe** (2011).
- **Piano grade 5**, Royal School of Music, **5th grade ballet**, Royal School of Dancing.

Languages

Mother tongue: Spanish; Fluent in English and French; German Intermediate level B2.

Summary of Research Achievements

Publications

- 1) Jeong F. Kim, Gyorgy Székely, Marc Schaepertoens, Irina B. Valtcheva, Maria F. Jimenez-Solomon, and Andrew G. Livingston, *In situ Solvent Recovery by Organic Solvent Nanofiltration*, ACS Sustainable Chemistry and Engineering, *Accepted*.
- 2) Gyorgy Szekely, Maria F. Jimenez-Solomon, Patrizia Marchetti, Jeong F. Kim and Andrew G. Livingston, *Sustainability assessment of organic solvent nanofiltration: from fabrication to application, a Critical review*, Green Chemistry, *in press*, DOI: 10.1039/c4gc00701h.
- 3) Patricia Gorgojo, Santanu Karan, Him Cheng Wong, Maria F. Jimenez Solomon, Joao T Cabral, and Andrew G. Livingston, *Ultrathin Polymer Films with Intrinsic Microporosity: Anomalous Solvent Permeation and High Flux Membranes*. Advanced Functional Materials, *in press, inside front cover*, DOI: 10.1002/adfm.201400400.
- 4) Patricia Gorgojo, Maria F. Jimenez Solomon, and A. G. Livingston, *Polyamide thin film composite membranes on crosslinked polyimide supports: improvement of RO performance via activating solvent*, Desalination, 344 (2014) 181-188.
- 5) Patrizia Marchetti, Maria F. Jimenez Solomon, Gyorgy Szekely, and Andrew G. Livingston, *Molecular Separation with Organic Solvent Nanofiltration- A Critical Review*. Chemical Reviews, *Accepted*.
- 6) M.F. Jimenez Solomon, Patricia Gorgojo, Marta Munoz-Ibanez, and A.G. Livingston, *Beneath the surface: Influence of supports on thin film composite membranes by interfacial polymerization for organic solvent nanofiltration*. J. Membr. Sci. 448 (2013) 102-113.
- 7) György Székely, Patrizia Marchetti, M.F. Jimenez Solomon, and A.G. Livingston, *Nanofiltration Membranes in Organic Solvents*. Encyclopedia of Membrane Science and Technology, E.M.V. Hoek and (Eds.), Wiley (2013).
- 8) M.F. Jimenez Solomon, Y. Bhole, and A.G. Livingston, *High flux hydrophobic membranes for organic solvent nanofiltration (OSN)—Interfacial polymerization, surface modification and solvent activation*. J. Membr. Sci. 434 (2013) 193-203.
- 9) Joanna Stawikowska, M.F. Jimenez Solomon, Y. Bhole, and A.G. Livingston, *Nanoprobe contrast agents to elucidate the structure of thin film composite nanofiltration membranes*. J. Membr. Sci. 442 (2013) 107-118.
- 10) M.F. Jimenez Solomon, Y. Bhole, and A.G. Livingston, *High flux membranes for organic solvent nanofiltration (OSN)—Interfacial polymerization with solvent activation*. J. Membr. Sci. 423–424 (2012) 371-382.
- 11) Miriam F. Beristain, Maria F. Jimenez-Solomon, Alejandra Ortega, Roberto Escudero, Eduardo Muñoz, Yasunari Maekawa, Hiroshi Koshikawa, Takeshi Ogawa, *Magnetic properties of polymerized diphenyloctatetrayne*, Materials Chemistry and Physics, 136, 2–3 (2012) 1116–1123.
- 12) Eduardo A. García-Zepeda, Ileana Licon-Limón, M. Fernanda Jimenez-Solomon, Gloria Soldevila, *Janus kinase 3-deficient T lymphocytes have an intrinsic defect in CCR7-mediated homing to peripheral lymphoid organs*, Immunology, 122, 2 (2007), 247-260.
- 13) M.F. Jimenez Solomon, C. Loenarz, H. Tsubery and M. Fridkin, *Structure Function Study of the Antimicrobial Peptide: Polymyxin B*, Scientific Reports of the ISSI, Weizmann Institute of Science, Rehovot (Israel), 29, C3 (2001).

Patent applications

1) M.F. Jimenez Solomon, Y. Bhole, and A.G. Livingston, UK Patent application No 1117950.4, "*Membranes for separation*" (2010).

2) M.F. Jimenez Solomon, Y. Bhole, and A.G. Livingston, UK Patent application No 1012083.0, "*Thin Film Composite Membranes for separation*" (2011).

Licensed Technologies

1) UK Patent application No 1117950.4 licensed to Evonik MET Ltd. through Imperial Innovations in 2013.

2) UK Patent application No 1012083.0 licensed to Evonik MET Ltd. through Imperial Innovations in 2013.