

CURRICULUM VITAE

Name: Marcela Bilek
Address: Schools of Physics & Biomedical Engineering
University of Sydney, 2006

Citizenship: Australian
Email address: marcela.bilek@sydney.edu.au
Telephone: +61 2 9351 6079

EDUCATION

Institution / dates	Qualification	Additional Information
Rochester Institute of Technology, College of Business, U.S.A. (1999-2000)	MBA	<ul style="list-style-type: none"> • GMAT score of 760 (top 1%) • Grade point average of 4.00 (perfect score) • AACSB accredited program
University of Cambridge, U.K. (1993-1996)	Ph.D. (Engineering)	<ul style="list-style-type: none"> • Seven international journal publications • Best paper award at international conference • Half-blue award for excellence in sport
University of Sydney, Australia (1986-1990)	B. Sc. degree	<ul style="list-style-type: none"> • Physics & Computer Science majors • First Class Honours • University Medal

ACADEMIC AWARDS, HONOURS AND SCHOLARSHIPS

- | | |
|---|---|
| University of Sydney

(2000-present) | <ul style="list-style-type: none"> • Member of the Order Of Australia (AM) for significant service to physics & biomedical engineering (2023) • Fellow of the Australian Academy of Science (2022) • Australian Research Council Laureate Fellowship (2020-2025;first-time applicant) • Fellow of the American Vacuum Society (2020) • Fellow of the Royal Society of New South Wales (2019) • Plasma Surface Engineering Leading Scientist Award (2018 –inaugural) • Fellow of the Institute of Electrical and Electronics Engineers (2015) • Australian Research Council Future Fellowship (2012-2016;first-time applicant) • Fellow of the American Physical Society (2012) • Australian Innovation Challenge Award for Health (2011 –inaugural >300 entries) • Finalist, Australian Museum Eureka Prize for Interdisciplinary Research (2009) • Invited delegate at the Prime Minister's 2020 Summit (2008) • Bulletin Australia's Smart 100, Finalist, Science Category (2005) • Australian Academy of Science Pawsey Medal (2004) • Australian Research Council Federation Fellowship (2003-08;first-time applicant) • MIT (Massachusetts Institute of Technology) TR100 Young Innovator (2003) • Malcolm McIntosh Prize for Physical Scientist of the Year (2002) • Royal Society of New South Wales Edgeworth David Medal (2002) • Young Tall Poppy Award for achievement in Science (2001) |
| University of Cambridge

(1993-2002) | <ul style="list-style-type: none"> • Emmanuel College Research Fellowship (1996-2000) –grant for independent research; Best paper at ICMCTF, San Diego, 1997; Peterhouse College Research Studentship (1993-1996); Cambridge Commonwealth Trust Honorary Packer Scholarship (1993-1996);Minerals, Metals & Materials Society Reduction Technology Award (1993) |
| University of Sydney

(1986-1990) | <ul style="list-style-type: none"> • Australian Institute of Physics NSW Branch Prize for Physics Honours (1990); • W.I.B. Smith Prize in Physics (shared - 1989); • Walter Burfitt Scholarship for Physics (1989); • Cadbury-Julius Sumner Miller Scholarship in Physics (1989); • Ian Jackson Memorial Prize for Computer Science (1989); • Cadbury-Julius Sumner Miller Scholarship in Physics (1987); • G.S. Caird Scholarship in Computer Science (1987); • IBM Prize for Computer Science (1987); • Science Foundation for Physics Scholarship (1986) |

PROFESSIONAL EXPERIENCE

Institution / dates	Position	Duties & achievements
<p>University of Sydney, Australia</p> <p>School of Biomedical Engineering, (Feb'17-present)</p> <p>School of Physics, (Nov'00-present)</p>	Professor of Applied Physics & Surface Engineering	<ul style="list-style-type: none"> • youngest and first female professor appointed in the School of Physics • Laureate Fellow (2020-25); Future Fellow (2013-17); Federation Fellow (2003-09); • world-leading research in plasma processing of materials resulting in plasma sources, processes and materials with applications to industries ranging from information technology, manufacturing and sustainability to medicine • undergraduate teaching all levels e.g. mechanics, electromagnetism, nanoscience, materials engineering and plasma physics • Faculty of Science Learning & Teaching Award for Outstanding Educational Engagement and Innovation (2022) • over 360 articles in international refereed journals, 1 authored book (now in its 2nd edition), 1 edited book, 5 book chapters and 15 patents • supervised 24 PhD students to completion as primary supervisor and 11 as co-supervisor • over \$28 million in research funding as lead investigator and further \$17M as co-PI
<p>Department of Engineering, University of Cambridge, U.K. (Oct'96-Oct'00)</p>	Research Fellow (Emmanuel College)	<ul style="list-style-type: none"> • independently co-ordinated and executed research projects on plasma systems for materials processing and calculations of thin film microstructure using the CPMD method (Max Planck Institute, Stuttgart) • teaching & administration of masters course in thin film transistor (TFT) fabrication; student supervision
<p>Lawrence Berkeley Laboratory, California, U.S.A. (Nov'97-Nov'00)</p>	Visiting Research Scientist	<ul style="list-style-type: none"> • fundamental research into pulsed vacuum arc plasma deposition and ion implantation techniques • industry funded collaboration on development of advanced magnetic filters for hard disk coating • 3 patent disclosures
<p>Technische Universität Hamburg-Harburg, Germany (Oct'98-Oct'99)</p>	Visiting Professor	<ul style="list-style-type: none"> • design of course materials and introduction of new undergraduate courses for international students; lecturing undergraduate Physics & Engineering students • design & commission of nano-tube fabrication system for industry sponsored aerospace materials research
<p>Australian Key Centre for Electron Microscopy & Microanalysis (Mar'99)</p>	Visiting Lecturer	<ul style="list-style-type: none"> • developed and presented a lecture series on plasma processing of materials, covering current technology and relevant plasma physics
<p>Comalco Research Centre, Melbourne, Australia (Mar'91-Sept'93)</p>	Industrial Research Scientist	<ul style="list-style-type: none"> • design of aluminium smelting & reduction technology • developed finite element method for prediction of magneto-hydrodynamic flows in reduction cells • Minerals, Metals & Materials Society Reduction Technology Award (1993)
<p>ANSTO, Sydney Australia. (Nov'89-Nov'90)</p>	Research Consultant	<ul style="list-style-type: none"> • consulting to the Biomedicine and Health Division on Neutron Capture Therapy for cancer program • computer calculations of predicted radiation doses to cells in various tissue configurations
<p>IBM Asia-Pacific Headquarters, Tokyo, Japan. (Jan'88-Mar'89)</p>	Salaried Student Intern	<ul style="list-style-type: none"> • programming & maintenance of software • development of specialist accounting software for transfer of accounting HQ from Tokyo to the USA

MEMBERSHIPS, EDITORIAL & ADVISORY ROLES

- Appointed Guest Professor, Linköping University (LiU) (2019-)
- Elected Trustee, American Vacuum Society (2015-2018)
- Associate Editor, Journal of Applied Physics (since 2014)
- Editorial Board Member, Surface and Coatings Technology (since 2012); Plasma Processes & Polymers (2018-2022)
- European Union COST Action on Highly Ionised Pulsed Plasma Processes (2009-2013).
- Fellow at the Institute of Ion Beam Physics and Materials Research, Forschungszentrum Dresden-Rossendorf (2007).
- ARPANSA Nuclear Safety Committee (2003-2009).
- Advisory Professor of Southwest Jiaotong University, Chengdu, China (2006-)
- Australian Academy of Sciences National Committee for Physics (2004-2006).
- Helic H-1 National Fusion Facility Advisory Board (2003-2018).

RESEARCH GRANTS AWARDED

Whilst at the University of Sydney, Professor Bilek has been awarded over **\$28 million** in competitive research funding as lead investigator and a further **\$17 million** as co-CI. Selected grants are shown below:

NB: +\$ designates non-category 1 co-contributions from collaborating organisations including industry partners

- CRC-P (2023-25): *AI driven design of custom in-space propulsion to extend satellite ability*, \$1,280,926 [co-CI]
- AUSMURI (2023-2025): *3D Bio-Nanomaterial Displays with Designer Architectures and Functions*, \$ 2,999,588 [Lead CI]
- ARC Linkage Infrastructure (2022): *Advanced materials synthesis and environmental characterisation facility*, \$1,040,375 +\$1,138,537 (various Universities) [Lead CI]
- ARC Linkage Infrastructure (2022): *Versatile laser processing system for multi-disciplinary research*, \$480,000 +\$216,000 (various Universities) [Co-CI]
- ARC Discovery (2022-2024): *Synthetic leukocytes: bio-inspired DNA nanorobots powered by flow*, \$578,178 [Co-CI]
- ARC Linkage (2021-2024): *In-situ biofunctionalisation for additive manufacturing*, \$431,567 (RegeMat3D Ltd) [Co-CI]
- ARC Australian Laureate Fellowship (2020-2025): *Plasma surface engineering for break-through technologies in biomedicine*, \$3,279,753 +\$1,842,474 (ARC & University of Sydney) [Lead CI]
- ARC Discovery (2019-2022): *Plasma Surface Engineering: A New Dimension of Functionality for High Surface-Area-to-Volume Materials*, \$470,000 [Lead CI]
- ARC Linkage (2016-2019): *Vacuum insulated energy efficient windows: creating sustainable cities*, \$660,000 +\$519,470 (Velux and Viridian) [Lead CI]
- CRC for Cell Therapy Manufacturing (2014-2019): *Advanced materials platforms*, +\$1.1M (Terumo BCT & Athersys/Regenesys) [Co-CI]
- NHMRC Development Grant (2014-2016): *Tissue engineered synthetic vascular grafts for arterial replacement*, \$411,000 (HRI & RPA) [Co-CI]
- ARC Linkage (2013-2015): *Highly multiplexed rapid-analysis microarrays for early disease diagnosis*, \$485,000 +\$60,000 (AusDiagnostics) [Co-CI]
- ARC Discovery (2013-2015): *Biomaterials with multifaceted tunability and bio-specificity*, \$385,000 [Lead CI]
- ARC Future Fellowship (2012-2016): *Harnessing the bioactivity of proteins and polypeptides*, \$931,168 +\$60,000 (The University of Sydney) [Lead CI]
- ARC Linkage (2012-2015): *New Generation Evacuated Glazing for Emissions Reduction in the Built Environment*, \$730,000 +\$345,675 (Velux) [Lead CI]
- NHMRC Development Grant (2012-2014): *Development of Endovascular Stents with Proactive Biocompatibility*, \$417,550 (HRI & RPA) [Co-CI]
- NHMRC Project Grant (2012-2015): *Bioengineering Endovascular Prostheses with Proactive Biocompatibility*, \$606,325 (HRI & RPA) [Co-CI]
- ARC Linkage (2011-2014): *Multifunctional surfaces for implantable biomedical devices*, \$540,000 +\$381,107 (LfC & SpineCell) [Lead CI]

- ARC Discovery (2011-2014): *New generation pulsed magnetron sputtering for the synthesis of advanced materials*, \$480,000 [Lead CI]
- ARC Discovery (2010-2013): *Surface immobilisation of enzymes for the synthesis of ethanol*, \$680,000 [Co-CI]
- ARC Linkage Infrastructure (2008): *Comprehensive Analysis Facility for Thin Films and Surfaces*, \$750,000 +\$1,278,298 (various Universities) [Lead CI]
- ARC Linkage (2008-2011): *Plasma processes for optimising the performance of surfaces for biomedical applications*, \$795,000 +\$144,213 (Cochlear & SpineCell) [Lead CI]
- ARC Linkage (2007-2012): *Fracture-Resistant Highly Insulating Vacuum Glazing*, \$1,320,340 +\$474,660 (NSG & Sydney Glass) [Lead CI]
- ARC Discovery (2007-2009): *New nanolaminate ternary and quaternary alloy phases by thin film synthesis*, \$675,000 [Lead CI]
- ARC Discovery (2006-2009): *Design and synthesis of transparent conducting metal oxides*, \$680,000 [Lead CI]
- ARC Linkage Infrastructure (2006): *Combinatorial deposition and characterisation facility for new alloy thin film materials*, \$1,200,000 +\$765,000 (various Universities) [Lead CI]
- ARC Discovery (2004-2007): *Interface engineering of multilayer nanostructures*, \$385,000 [Lead CI]
- ARC Linkage Infrastructure (2004): *Interactive network for plasma and surface analysis*, \$726,164 +\$572,000 (various Universities) [Lead CI]
- ARC Federation Fellowship (2003-2008): *Creation of functional surfaces for biodevices and aerospace applications*, \$1,150,000 [Lead CI]
- ARC Discovery (2002-2005): *Development of Cathodic Arc Plasma Immersion Ion Implantation (PIII) for biomaterials applications*, \$477,000 [Lead CI]
- ARC Linkage (2003-2006): *The Surface Science of Vacuum Glazing*, \$459,000 +\$245,000 (NSG & Pacific Commercial Industries) [Lead CI]
- ARC Linkage (2003-2006): *Development of a novel Ecological Footprint for environmental reporting of companies*, \$300,000 +\$93,000 (Sydney Water Corporation) [Co-CI]
- ARC Linkage (2002-2005): *Response of proteins to external non-ionising radiation: an experimental and computer modelling investigation*, \$240,000 +\$95,000 (Cytopia) [Co-CI]
- SPIRT (AI 2001-2004): *Advanced Coatings for Tools and Other Components Using a Pulsed High Voltage Bias Process in a Physical Vapour Deposition System*, \$243,000 +\$60,000 (Sutton Tools) [Co-CI]

PUBLICATIONS

Throughout her career, Professor Bilek has conducted fundamental, high-impact research at the cutting-edge of plasma science, publishing more than **450 articles** in the refereed scientific literature and **18 patent applications**. Her work has attracted over 12,000 citations and her **h-index** is **58**.

PATENTS

1. A. Anders, R.A. MacGill, M.M.M. Bilek and I.G. Brown, Filters for Cathodic Arc Plasmas, US Application Serial No.: 09/540,679 filed on 03/31/2000, Lawrence Berkeley National Laboratory (Case No. IB-1484), University of California, Berkeley. US Granted patent No. 6465780 15/10/2002.
2. M. Bilek, D.R. McKenzie, Y. Yin and A. Imenes, Apparatus for Plasma Treatment - APPA 2004900864, filed 20/02/2004, WO 05/081592 – Granted Australia (AU2007225021), Canada (CA2642941), EP 07718571.8, JP 2008-558592, US 12/225022.
3. M. Bilek, DR McKenzie, N.J. Nosworthy, A. Kondyurin, Activated Polymers Binding Biological Molecules - PCT/AU2007/000321 (WO2007/104107), priority 15 March 2006.
4. M. Bilek, DR. McKenzie, Biological Functionalisation of Substrates – PCT/AU2008/001085, priority of 27 July 2007.
5. M. Bilek, A. Kondyurin, S. Perrier, C. Neto, Biologically Functionalised Materials, Australian Provisional Patent filed 8 December 2009.
6. Y. Yin, M. Bilek, D.R. McKenzie, Deformable implantable medical devices comprising a columnar structured plasma polymer surface capable of binding functional biological molecules, PCT/AU2012/000714, Priority of December 2010
7. A. Kondyurin, M. Bilek, Structures for Immobilisation and Protection of Organic Molecules, PCT/AU2013/001347, priority of 22 November 2012.
8. M. Bilek, D. Bax, A. Weiss, A. Kondyurin, Substrate with covalently immobilised oriented peptides and protein fragments – Materials and Methods, PCT/AU2014/050204, priority 2 September 2013. (entered national phase 2 March 2016)
9. M. Bilek, A. Kondyurin, E. Kosobrodova, DR. McKenzie, Surface modification of a hollow fibre bioreactor cassette, AU2015900575, Priority 2 Feb 2015.

10. PR Neumann, M. Bilek, DR McKenzie, Internal wire-triggered pulsed cathodic arc propulsion system, AU2015903748, US10807741 20/10/2020, Priority 15 Sept 2015. (Commercialisation by Neumann Space, Australia)
11. MAC Santos, E Filipe, P Lorwattanapongsa, M Bilek, SG Wise, Nanoparticles, AU2016905306, US16471180 23/1/2020, Priority 21/12/2016 (Commercialisation by HRI, Australia)
12. M. Bilek, D.R. McKenzie, K Alavi, C.O. Lotz, Method for covalent Immobilization of Molecular compounds, CH020191300/19, 11/10/2019; PCT/EP2020/078463, 9/10/2020. (Commercialisation by REGEMAT3D, Spain)
13. D. R. McKenzie, M. Bilek, A. Kondyurin, E. Kosobrodova, Plasma ion processing of substrates, AU2019903902, International Application number PCT/AU2020/051117 priority date 16/10/2019. (Commercialisation by Chris O'Brien LifeHouse, Australia)
14. L. Haidar, M. Bilek, B. Akhavan, S.T. Fraser, M. Baldry, Process for Producing Polymeric Nanoparticles, AU2021903029, PCT/AU2022/051135 priority date 21/9/2021. (Commercialisation by University of Sydney, Australia)
15. C.T. Tran, M. Bilek, A. Gilmour, S.T. Fraser, B. Boumelhem, Transparent coated glass substrates, PCT/AU2022/901034, priority date 19/4/2022. (Commercialisation by University of Sydney, Australia)
16. M. Bilek, C.T. Tran, A. Gilmour, D.R. McKenzie, S. Cottam, Optically transparent, covalently binding films with patterned conductive sites suitable for cell culture, biological sensing and electrophysiology applications, PCT/AU2023/903830, priority date 28/11/2023. (Commercialisation by University of Sydney, Australia)
17. D. Ashok, J. Singh, M. Bilek, A. Waterhouse, S. Jiang, Microfluidic devices, PCT/AU2024/900360, priority date 15/2/2024. (Commercialisation by University of Sydney, Australia)
18. S.C. Fleming, B. Akhavan, M. Bilek, B.B. Boumelhem, W. Chrzanowski, J. Digweed, S. Farajikhah, S.T. Fraser, M.C.J. Large, M. Morris, A. Patton, I. Rukhlenko, A. Stefani, Stem-cell differentiation on polymer fibres, PCT/AU2024/050705, priority date 28/6/2024 (Commercialisation by University of Sydney, Australia)

CONFERENCE ORGANISING EXPERIENCE

1. Member, Advisory Board, 19th International Conference on Plasma Surface Engineering, 2-5 September, Trade Fair Erfurt, Germany (2024)
2. Member, International advisory board of the International Symposium on Sputtering and Plasma Processes (ISSP), 3-5 July, Kyoto (2024)
3. Member, Scientific Committee, 13th Asian-European International Conference on Plasma Surface Engineering (AEPSE) 5-8 November, Busan, Republic of Korea (2023)
4. Chair and Conference Organiser, Gaseous Electronics Meeting, Sydney, Australia (2022)
5. Member, International Organizing Committee - International Workshop on Functional Nanocomposites, Milano, Italy (2021)
6. Chair and Symposium organiser, Tissue Engineering & Regenerative Medicine International Society - AP Chapter and the 7th Asian Biomaterials Congress, Session: Plasma Technologies for Tissue Engineering and Regenerative Medicine, Brisbane, Australia (2019)
7. Chair and Symposium organiser, ICMCTF, Session D4 Biointerfaces: Improving the Cell Adhesion and Avoiding Bacteria Adhesion, San Diego, USA (since 2017)
8. Member, International Program Committee, 11th Asian-European International Conference on Plasma Surface Engineering (AEPSE), Jeju, Korea, 11-15 Sept, 2017
9. Member, Organising Committee, Ion Beam Enabled Nanoscale Fabrication and Advanced Materials Synthesis Symposium, MRS Fall Meeting Boston, 27 Nov – 2 Dec, 2016
10. Advisory Board, Asia Pacific Conference on Plasma Science and Technology (APC-PST), Adelaide, 1-4 Sept 2014.
11. Advisory Board, Gaseous Electronics Meeting (GEM), Victor Harbor, South Australia, 9-12 Feb 2014
12. Local Organising Committee, International Symposium on Plasma Chemistry, Cairns, Australia, 4-9 Aug (2013)
13. International Program Committee, 18th International Conference on Surface Modification of Materials by Ion Beams, Turkey, 15-20 Sept (2013)
14. Member, Advisory Board of the Thirteenth International Conference on Plasma Surface Engineering (2012)
15. Member, Program Committee, 18th International Stellarator/Heliotron Workshop & 10th Asia Pacific Plasma Theory Conference, ANU, 29/1-3/2 (2012)
16. Member Program Committee, European MRS, Strasbourg, France (2010).
17. Member, Program Committee, 17th International Conference on Ion Beam Modification of Materials, Montreal, Canada, 22-27 August (2010).
18. Member, Advisory Board of the Twelfth International Conference on Plasma Surface Engineering (2010)
19. Member, International Scientific Advisory Committees for the International Conference on Plasma Based Ion Implantation and Deposition (PBII&D) since 2003.

20. Member, International Advisory Board, CIMTEC 2010 - 12th International Conference on Modern Materials and Technologies.
21. Convenor, Surface Engineering Symposium - Materials Australia and the Australasian Ceramics Society Materials and AustCeram International Conference, 4th-6th July, Sydney, 2007.
22. Co-Convenor, ETOPIIM 7 (the 7th International Conference on Electrical, Transport and Optical Properties in Inhomogeneous Media), Sydney, Australia, 9-13 July 2006.
23. Co-chair, Conference on Smart Materials III at the SPIE International Symposium on Smart Materials, Nano-, and Micro-Smart Systems, Sydney, Australia 12-15th December 2004.
24. Member, Scientific Committee of the European Materials Research Society Symposium on Synthesis, Characterization and Applications of Amorphous Carbon Films, Strasbourg, France, 24-28th May, 2004.
25. Member of the Organising Committee, Australian Academy of Sciences Inaugural Symposium on Frontiers of Science, 31 July to 1 August, 2003, Shine Dome, Canberra.
26. Member of the International Scientific Committee, The 10th International Manufacturing Conference in China (IMCC 2002) – Integration of Management and Technology, Xiaman, China, 11-13 October, 2002.
27. Co-convenor of “The Rf Spectrum: Managing Community Issues”, Crown Plaza, Coogee Beach, Sydney, 22nd-23rd March 2001.

INVITED PRESENTATIONS (since 2002):

1. 12th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-12), 13-17 Oct, 2024, Taipei, Taiwan (Plenary)
2. 18th International Symposium on High Pressure Low Temperature Plasma Chemistry, Sept 1-6, 2024, Padova, Italy
3. 14th International Nanomedicine Conference, 24-26 June 2024, Sydney (Plenary)
4. 23rd Gaseous Electronics Meeting, 28 Feb – 1 Mar 2024, Adelaide (Keynote)
5. 32nd Stem Cell Network Workshop Engineering Surfaces for Regenerative Medicine: from Biomaterials to medical devices, Nov 20, Sydney
6. International Atomic Energy Agency (IAEA) Technical Meeting on Emerging Applications of Plasma Science and Technology, Sept 19-22 2023, Vienna Headquarters, Austria
7. International Conference on Materials Innovation (ICMI), Aug 23-26 2023, Brisbane (Plenary)
8. Australasian Society for Biomaterials and Tissue Engineering (ASBTE) Annual Conference, April 12-14 2023, Christchurch, New Zealand (Plenary)
9. MRS Fall meeting, Nov 27 - Dec 2, 2022, Boston, USA
10. Science at the Shine Dome, Nov 22 – 24, Canberra (New Fellow Inauguration)
11. Symposium of Nanoscience and Nanomaterials, Aug 31 – Sept 2, 2022, Ensenad, Mexico (Plenary)
12. 4th Conference on Advanced Functional Materials (AFM2022), 29-31 Aug 2022, Norrköping, Sweden (Keynote)
13. Gordon Research Conference on Plasma Processing Science, July 24-29, 2022, Andover, NH, USA,
14. 27th Annual Conference for Australasian Society for Biomaterials and Tissue Engineering, April 20-22 2022, Melbourne Australia (Keynote)
15. 67th American Vacuum Society International Symposium (AVS 67), Oct 24-29 2021, Charlotte, NC, USA.
16. Virtual Vacuum Congress 2021 (VVC-21), Oct 6-8 (Keynote)
17. 10th International Symposium on Plasma Bioscience, (ISPB 10) & 8th International Conference on Plasma Medicine (ICPM 8), Aug 2-6 2021, Incheon, Korea
18. International Conference on Plasma Processing (ICPP2021), April 7-9 2021, Paris, France (Keynote)
19. Online Conference on Nanoelectronics and Nanomaterials for wearable and implantable applications, Dec 8-9 2020, Brisbane, Australia (Keynote)
20. Agora Annual Fall Conference, Oct 21 2020, Linköping, Sweden (Keynote)
21. 1st International Conference on Sustainable Sensing Systems (ICSSS 2020), Nov 4-6 2020, Sydney, Australia.
22. Gaseous Electronics Meeting (GEM XXI), Feb 10-14, 2020, Canberra, Australia.
23. International Conference on Nanoscience and Nanotechnology (ICONN 2020), Feb 9-13, 2020, Brisbane, Australia.
24. International Thin Films Conference (TACT 2019), Nov 17-20, 2019, Taipei, Taiwan (Keynote)
25. 16th International Conference on Plasma Surface Engineering, Sept 17–21 2018, Garmisch-Partenkirchen, Germany (Plenary);
26. 9th Vacuum and Surface Science Conference of Asia and Australia (VASSCAA-9), 13-16 August 2018, Sydney (Plenary)
27. 9th International Nanomedicine Conference, 25 – 27, June 2018, Sydney
28. 16th International conference on Reactive Sputter Deposition, 4-6 December 2017, Plzen, Czech Republic.
29. 6th International Symposium on Surface and Interface of Biomaterials (ISSIB) 16-21 Oct, 2017, Chengdu, China (Plenary)
30. 14th International Conference on Plasma Based Ion Implantation & Deposition (PBII&D) 17-20 Oct, 2017, Shanghai, China
31. 11th Asian-European International Conference on Plasma Surface Engineering (AEPSE2017) 11-15 Sept, 2017 Jeju, Korea (Plenary)

32. 15th International Conference on Advanced Materials of the International Union of Materials Research Societies, (IUMRS-ICAM) 27 Aug-1 Sept, 2017, Kyoto, Japan
33. 8th Functional Coatings and Surface Engineering Symposium, 4-7 June 2017, Montreal, Canada
34. International Conference on Metallurgical Coatings & Thin Films, 24-28 April 2017, San Diego, USA
35. International Conference on Surfaces, coatings and interfaces, 29-31 March 2017, Incheon, Korea (Keynote)
36. 13th Asia Pacific Physics Conference and the 22nd Australian Institute of Physics Congress, 4-8 December 2016, Brisbane
37. 20th International Vacuum Congress, 21-26 August 2016, Busan, Korea
38. 13th Asia-Pacific Conference on Plasma Science and Technology (APCPST), 19-22 May 2016, Shanghai, China
39. International Conference on Plasma-Based Ion Implantation and Deposition, 5-9 Oct, 2015, Buenos Aires, Argentina (Plenary)
40. International Symposium on Sputtering and Plasma Processes (ISSP), 8-10 July, 2015, Kyoto, Japan
41. 5th International Symposium on Surfaces and Interfaces of Biomaterials (ISSIB) held in conjunction with the 24th Annual Conference of the Australasian Society for Biomaterials and Tissue Engineering (ASBTE), Sydney, Australia, 7-10 April 2015 (Keynote)
42. 16th Australasian Polymer Summer School, Melbourne, 3-5 Feb 2015.
43. AVS 61st International Symposium, 9-14 Nov, Baltimore, USA, 2014.
44. 12th Asia Pacific Conference on Plasma Science and Technology (APCPST) & Symposium on Plasma Science for Materials (SPSM) 31 Aug – 5 Sept, Adelaide, Australia 2014 (Keynote)
45. 18th International Conference on Surface Modification of Materials by Ion Beams, 15-20 Sept, Kusadasi, Turkey, 2013
46. 19th International Vacuum Congress, Sept 9-13, Paris, France, 2013 (Keynote)
47. WE-Heraeus-Seminar series for early career researchers "Ionized- and Ion-Assisted PVD: principles and current trends", June 25-28, Dresden, Germany 2013;
48. *BioInterface 2012*, Oct 23-26, Dublin, Ireland (Plenary)
49. *13th International Conference on Plasma Surface Engineering*, Sept 10–14, Garmisch-Partenkirchen, Germany 2012 (Plenary);
50. Asia-Pacific Symposium on Nanobionics, Sept 19-21, Innovation Campus, Wollongong, 2012;
51. Sydney Tryptophan/Redox Biology Symposium, Dec 1-2, Sydney, Australia, 2011 (Plenary);
52. 6th International symposium on Surface Science and Nanotechnology (ISSS-6), Dec 11-15, Tokyo, Japan, 2011
53. 11th International Workshop on Plasma-Based Ion Implantation and Deposition, Sept 8-12, Harbin, China 2011 (Plenary)
54. 6th International Conference on Surface Engineering, May 10-13, Xi'an, China, 2011(Plenary)
55. MRS (Materials Research Society) Spring Meeting, 25-30 April, San Francisco, USA, 2011 (Keynote)
56. Gordon Research Conference on Biointerface Science, 5-10 September, Les Diablerets, Switzerland, 2010
57. Huntsville Ion Beam Institute - "Ion Beam Science and Technology - Looking Ahead", Huntsville, Alabama, 4-7 August 2010 (Keynote)
58. 6th International Symposium on Organic Molecular Electronics, June 10-11, Chiba, Japan, 2010
59. MRS (Materials Research Society) of Japan Meeting, Dec 7-9, Yokohama, Japan 2009;
60. Biological Surfaces and Interfaces, June 27 – July 2, Sant Feliu de Guixols, Spain 2009;
61. 8th Pacific Rim Conference on Ceramic and Glass Technology, May 31 – June 5, Vancouver, Canada 2009;
62. MRS (Materials Research Society) Spring Meeting, April 13-17, San Francisco, USA 2009; (Keynote)
63. Gordon Research Conference on Biointerface Science, Sept 14-19, Aussois, France 2008;
64. Asia-Pacific Symposium on Nanobionics, June 22-25, Innovation Campus, Wollongong, 2008;
65. 6th International Conference on Atomic and Molecular Data and their Applications, Oct 27-31, Beijing, China 2008 (Declined due to new baby);
66. Conference on Computational Physics, Aug 5-9, Ouro Preto, Brazil 2008 (Declined due to new baby);
67. The First International Symposium on the Surface and Interface of Biomaterials, Oct 5-7, Chengdu China, 2007 (Declined due to new baby);
68. BIOSURF VII – Functional Interfaces for Directing Biological Response, 28-31 Aug, Zurich 2007;
69. 15th Internat'l Summer School on Vacuum Electron and Ion Technologies, 17–21 Sept, Sozopol, Bulgaria 2007;
70. Plasma Processes and Polymers, Feb 2-5, Prague 2007;
71. 16th Symposium on Application of Plasma Processes, Jan 20-25, Podbanske, Slovakia 2007;
72. Australian Research Network for Advanced Materials ECR Workshop, Dec 13, Sydney 2006;
73. "Fellowship Experiences", Address at the announcement of the 2006 ARC *Federation Fellowships* by the Minister for Education, Science and Training, the Hon. Julie Bishop MP, 11 May 2006;
74. 8th International Conference on Plasma Based Ion Implantation and Deposition (PBII&D), Sept19-22, Chengdu, China 2005;
75. *International Conference on Metallurgical Coatings and Thin Films*, May 2-6, San Diego, USA 2005;
76. *Australian Institute of Physics National Congress*, Jan 31 –Feb 4, Canberra 2005 (Plenary);
77. *9th International Conference on Plasma Surface Engineering*, Sept 13–17, Garmisch-Partenkirchen, Germany 2004 (Plenary);
78. *International Conference on Ion Beam Modification of Materials*, Sept 5-10, Monterey, USA 2004;
79. *7th World Biomaterials Congress*, May 17–21, Sydney 2004;

80. *The Australian Academy of Science 50th Anniversary Symposium - A celebration of Australian science*, May 5-7, Canberra 2004;
81. *ICTP/IAEA Workshop on Plasma Physics: Capacity Building in Plasma Applications and Diagnostic Techniques*, Nov 10–15, Trieste, Italy 2003 (Plenary);
82. *Australian Frontiers of Science*, July 30-31, Canberra 2003;
83. *The XXVIth International Conference on Phenomena in Ionised Gases*, July 15-20, Greifswald, Germany 2003;
84. *The XXth ISDEIV (International Symposium on Discharges and Electrical Insulation in Vacuum)*, July 1-5, Tours, France 2002 (Plenary);
85. *NATO Advanced Research Workshop – Emerging Applications of Vacuum-Arc-Produced Plasma, Ion and Electron Beams*, June 24-27, Baikal, Russia 2002;
86. *The 20th Symposium on Plasma Physics and Technology*, June 10-13, Prague, Czech Republic 2002;

END-USER AND MEDIA ENGAGEMENT

- Leadership of collaborative research programs with the University Medical Centre Utrecht, Netherlands; Royal Prince Alfred Hospital, Heart Research Institute, Charles Perkins Centre and industry partners RegenHU Switzerland; NSG, Japan; Sydney Glass; LfC, Poland; Velux, Denmark; Viridian; AusBiologics; AusDiagnostics and Spinecell Pty Ltd, Australia; REGEMAT3D, Spain and Culturon Pty Ltd.
- Scientific opinions on request eg. regarding the International Agency for Research on Cancer (IARC) classification of mobile phones as possibly carcinogenic in 2011 (Catalyst 2/6/2011).
- Research featured in “Heroes of Australian Science” by Astrid Judge (publisher MacMillan). The book was written to provide materials for the Science Curriculum in Australian schools.
- Research on biocloaking technology for implantable biomedical devices featured on Catalyst in 2014 (see Catalyst 11/12/14) and on channel 9 news.
- Sydney Morning Herald; The Age, “Mars awaits: Sydney rocket scientist to test ion drive in space” 29/9/16
- ABC News24 Live Television “International Space Station to trial Aussie-designed thrusters that could power journey to Mars” & ABC AM radio 29/9/16
- Outreach lecture “Girls in STEM”, International Grammar School, Ultimo (2017-2019).
- New Electronics, UK “Next-gen surface modification bolsters implantable medical devices” 24/1/18
- Sensors On-line “Novel Medical Implants May Integrate Easier, Reduce Infection Risks” 24/1/2018
- The Engineer, UK “Synthetic peptides and electric fields combine to improve integration of implants” 24/1/18
- Phys Org News “Implantable medical devices bolstered by next-gen surface modification” 24/1/18
- Science Daily “Implantable medical devices bolstered by next-gen surface modification” 24/1/18
- ABC Radio “Focus” – Expert opinion on microwave radiation 28/5/2021 & 3/6/2021