**Curriculum Vitae**

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**Nationality:** Australian and Taiwanese

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<https://scholar.google.com.au/citations?user=2TQTOl8AAAAJ&hl=en>

[https://www.scopus.com/authid/detail.uri?origin=resultslist&authorId=57194738295&zone=](https://www.scopus.com/authid/detail.uri?origin=resultslist&authorId=57194738295&zone=%20)

**Professional Affiliations:**

* Editorial Board Member, Nature’s *Scientific Reports* and *PLOS One*
* Board Director (2017 – 2022), Member, Membrane Society of Australasia
* Member, Royal Australian Chemical Institute (MRACI CChem)
* Member, European Membrane Society
* Member, North American Membrane Society
* Fellow of Higher Education Academy UK

### Educational Background:

* Graduate Certificate in Higher Education (December, 2018)
* PhD in Biomedical Engineering, The University of Queensland (conferred on 12th September 2011)

Thesis Title: *Development of injectable biodegradable hydrogels for the controlled delivery of bioactives for treating alveolar bone loss associated with periodontitis and peri-implantitis.*

* Bachelor Biotechnology in Chemical Biotechnology (Honours Class I), UQ, December 2006
* Bachelor Applied Science in Medical Radiation Therapy (Distinction), QUT, December 1999

### Employment History:

2020 – Present Senior Lecturer (School of Chemical and Biomolecular Engineering (SCBE), USYD)

2017 – 2019 Lecturer (SCBE, USYD), ARC-DECRA Research Fellow (USYD)

2016AAA Chevron Fellow (Materials Science & Engineering, Ohio State University)

2015 – 2016 ARC-DECRA Research Fellow (School of Chemical Engineering, UQ)

2015 – 2017 Associate Director of Functional Interfacial Materials and Membranes Laboratory (FIM2Lab) at School of Chemical Engineering, UQ

2011 – 2014 Postdoctoral Research Fellow (School of Chemical Engineering, UQ)

2007 ‒ 2011 Australian Postgraduate Award (APA) PhD scholar (Australian Institute for Bioengineering and Nanotechnology, UQ)

2006 – 2011 Undergraduate laboratory lead tutor (School of Chemical and Molecular and Biosciences, UQ)

2006 – 2007 Research assistant (Centre for Advanced Imaging, UQ)

2004 – 2006 Undergraduate chemistry PASS tutor (SCMB, UQ)

2004 – 2005 Laboratory research assistant (Protein Expression Facility- Institute for Molecular Biosciences, UQ)

2000 – 2007 Radiation therapist (Wesley Cancer Care Centre, Brisbane and East Coast Cancer Centre, Gold Coast)

### Career Achievements and Awards:

2017 – 2018 **USYD FEIT** **Early Career Researcher Award**

2016 **American Australian Association (AAA) Chevron Fellowship**

2016 European Membrane Society Young Academic Award

2015 – 2019 **ARC-DECRA Fellowship**

2013 – 2014 **UQ-Early Career Researcher Award**

2010 Australian Microscopy and Microanalysis Society Student Bursary Award for attending 21st Australian Conference on Microscopy & Microanalysis

2008 Honourable Mention for Treolar Oral Prize at the 30th Australasian Polymer Symposium conference

2007 – 2011 **Australian Postgraduate Award** and AIBN Top-Up Scholarships

2007 UQ Biotechnology Student Bursary Award based on academic excellence for attending 7th Discovery Science Biotechnology Conference

2005 UQ UnIChe Undergraduate Summer School Scholarship awarded for academic excellence, UQ

2003 – 2006 Commendation for High Achievements, Executive Dean of Biological & Chemical Sciences Faculty, UQ

1999 QUT Golden Key National Honour Society Certificate awarded for academic excellence, QUT

### Research Funding (Total: $1.56M AUD)

2018 – Cont. Major Industry Projects: USyd-Evoqua-DuPont ($210k), high-level industrial projects annually, Industry projects, **David Wang** (Academic Lead), Christopher Kersten, Geoffrey Johnston-Hall (Industry Lead).

2022 Sydney South East Asia Centre Collaborative Research Grant ($25k), ‘*Development of antifouling coating surfaces for separation and water treatment applications*’, **David Wang** (Lead), Anne Mai-Prochnow, Gustavo Fimbres Weihs, Muthia Elma, Nor Aida Zubir, Adi Darmawan.

2020 PitchIT NSW Western Local Health District, G208634-CT28990 ($10k), ‘*Feasibility study of reverse osmosis technology for dialysis treatment for improving water usage and wastage*’, **David Wang** (Lead), Gustavo Fimbres Weihs, Yihan Liu.

2020 USyd - NUS - Partnership Collaboration Awards, ($20k), ‘*Electrochemical purification of wastewater from biomass hydrothermal liquefaction - A decisive step towards biofuel and water sustainability*’ Alejandro Montoya, Ali Abbas, **David Wang**, Olivier Lefebvre.

2019 **ARC-Discovery Project**, DP190101734 ($450k), ‘*Designing High Performance Gas Separation by Interfacial Diffusion Membrane*’, **David Wang** (**Lead**), Amirali Ebrahim Ghadi, Dianne Wiley, Hendrik Verweij.

2019 Malaysian Ministry of Higher Education, FRGS/1/2018/STG01/UTP/02/3 ($40k), ‘*Investigation of Isosteric Heat of Adsorption of Metal Organic Frameworks Toward Formation of Cyclic Carbonate Compounds from CO2*’, Zulkifli M. A. Merican, Maizatul S. B Shaharun, Hassan Soleimani, Noor A. B. M. Zabidi, Zakaria B. Man, **David Wang** (International Partner)

2018 USYD FEIT Major Equipment Scheme ($110k), ‘*Three-Cell Permeameter for Laboratory Measurement of Hydraulic Conductivity*’, Abbas El-Zein, David Airey, **David Wang**, Yixiang Gan, Federico Maggi, Daniel Dias-Da-Costa.

2018 USYD FEIT Early Career Researcher Award ($51k), ‘*Designing High Flux, High Selectivity Gas Separation by Interfacial Diffusion Membranes*’, **David Wang**

2018 USYD SCBE Small Research Grant ($80k), ‘*Advanced Electrically Rechargeable Zinc-Air Battery*’, Yuan Chen, Li Wei, **David Wang**, Zengxia Pei, Tony Vassallo, Xiao Hu, Alex Qingyu Yan, Qiang Zhang

2018 University of Sydney, Sydney Analytical Access Scheme ($4k), ‘*In-situ SAXS Study of Phase Transition of Sol-gel Derived Metal Oxide Silica Thin Film Membranes Prepared under Thermal Heating*’, **David Wang**

2017 Sydney South East Asia Centre Workshop Grant ($20k), ‘*Sustainable Membrane Processes for Synergistic Energy and Water Applications*’, **David Wang** (Lead), Dianne Wiley, Qianhong She

2017 Sydney South East Asia Centre Regional Mobility Grant ($3k), **David Wang**

2016 ‒ 2017 **American Australian Association Chevron Fellowship** ($45k), ‘*Synthesis and Properties of Ceramic Based Thin Film Membranes by RTP Technique*’, **David Wang**

2016 ‒ 2017 Australian National University Indonesia Project Research Grants ($15k), ‘*Implementation of water desalination application via inorganic based membranes technology for wetland communities in South Kalimantan, Indonesia*’, Muthia Elma, **David Wang** (Co-lead)

2016/Round 1 Australian Synchrotron SAXS proposal–ID: 10378 ($3k), ‘*In-situ SAXS Study of Phase Transition of Sol-gel Derived Metal Oxide Silica Thin Film Membranes Prepared under Rapid Thermal Heating*’, **David Wang** (Lead), David Fengwei Xie, Shengnan Wang, Liang Liu

2015 ‒ 2019 **ARC-DECRA**, DE150101687 ($344k), ‘*Nanostructure Tailoring of Inorganic Membranes by Rapid Thermal Processing*’, **David Wang**

2015 Australian Nuclear Science and Technology Organization (ANSTO) proposal–ID: P4261, ($46k) ‘*Using Water/Ionic Liquid Mixtures to Regulate the Transition Temperature of Starch, a Natural Semi-Crystalline Polymer: Understanding the Underlying Mechanism by Simultaneous Rapid Visco Analysis and Small-Angle Neutron Scattering*’, David Fengwei Xie (Lead), **David Wang**, Xiaoyan Tan, Dongling Qiao, Binjia Zhang

2013 ‒ 2014 UQ-Early Career Researcher Award, ECR608054 ($28k), ‘*Designing Robust Photocatalytic Titania Carbon Hollow Fibers for Water Purification and Separation*’, **David Wang**

2013/Round 2 Australian Synchrotron XAS proposal–ID: M6610 ($3k), ‘*Investigation into the Impact of Cobalt Oxide environment on the Hydrothermal Stability of Amorphous Silica Matrices*’, Joao Diniz da Costa (Lead), **David Wang**, Dana Lee Martens, Liang Liu

2007 – 2011 Australian Postgraduate Award and AIBN Top-Up Scholarships ($114k), ‘*Development of injectable biodegradable hydrogels for the controlled delivery of bioactives for treating alveolar bone loss associated with periodontitis and peri-implantitis*’, **David Wang**

### Professional Contributions:

1. Research Supervision

* Currently supervising 5 PhD, 1 MPhil students (4 official and 2 affiliated).
* Trained and graduated 2 Postdoc, 5 PhDs, 1 MPhil, 2 MEng and 2 Summer Research BEng students.

1. Conference and Workshop Organization
   * Organising committee member of MEMDES 2020, IMSTEC 2022.
   * Organising committee member of Chemeca 2019: technical session chair for water and wastewater treatment.
   * **Secretary** of the SSEAC Masterclass / Industry Challenge Workshops (Nov 2017) title “Sustainable Membrane Processes for Synergistic Energy and Water Applications”.
   * **Chair** of the 4th Membrane Society of Australasia Workshop and Networking (Aug 2015) title “Ceramic-based Membranes for Gas Separation Applications”.
   * **Organiser** of remote Membrane Society of Australasia Workshops at UQ (Feb 2015 and Nov 2014).
   * Local supporting staff for the 13th International Conference on Inorganic Membranes (July 2014) and the UQ Membrane Workshop (July 2013).
   * Session chair for
     + 12th conference of the Aseanian Membrane Society (Korea; Jul 2019; Gas Separation)
     + 9th International Mesostructured Materials Symposium (Brisbane; Aug 2015).
     + 13th (Brisbane; Jul 2014) and 14th (Atlanta; Jul 2016) International Conference for Inorganic Membrane.
     + 8th International Membrane Science & Technology Conference (Melbourne; Nov 2013)
2. Contributions to Professional Community.
   * Industry Advisory Committee for Head of School of Chemical & Biomolecular Engineering, USYD (2018 ‒ cont.)
   * **Board of Director** of Membrane Society of Australasia (2017 ‒ 2022.) as Newsletter Editor and E-Updates.
   * **Editorial Board Member** for *Scientific Reports* (2016 ‒ cont.) and *PLOS One* (2017 ‒ cont.); frequent handles manuscript submission, review process and make decision on manuscript acceptance.
   * Expert reviewer for
     + **European Innovation Council HORIZON Pathfinder and Transition** (2020 ‒ cont.), **Australia Research Council** (Linkage, Discovery, DECRA Fellowship) and **Australian Synchrotron**.
     + Q1 Journals (2016 Journal Citation Reports, Thomson ReutersTM; Top 25%): *Nature Scientific Reports, Journal of Membrane Science, ACS Sustainable Chemistry & Engineering, Soft Matter, Fuel Processing Technology, Materials, Separation and Purification Technology, Journal of Physical Chemistry C*.
     + Q2 Journals (Top 25 – 50%): *Journal of Applied Polymer Science, Macromolecular Theory and Simulations*.
   * Membranes, MDPI (IF 4.106) Special Issue Editor on “Organic-Inorganic Hybrid Membranes for Separation and Purification Applications”, **2021** (<https://www.mdpi.com/journal/membranes/special_issues/hybrid_membranes>).
   * PhD thesis examiner for Monash University, University of Melbourne, University of Technology Sydney, Deakin University, University of New England.
   * Examiner for General Sir John Monash Foundation Scholarship and American Australian Association Fellowship.

### List of Publications: (corresponding author is underlined signifying project leader and funding manager, and significance of research contribution is ranked by decreasing order of authorship). Research impact (from Scopus 08/09/2022) include 87 research publications (16 first-, 18 corresponding author), H-index 26; 1778 citations; highest citation: 113 (Chem. Eng. J. 2014, 236, 314).

**Scholarly book chapters**

1. Julius Motuzas, Adi Darmawan, Muthia Elma, **David K. Wang**, “Microporous silica membrane: structure, preparation, characterization and applications”, in A. Basile, K. Ghasemzadeh (Eds), *Current Trends and Future Developments on (Bio-) Membranes: Microporous membrane and membrane reactors*, Elsevier, 1st Edition, 2019, 77-99 (https://doi.org/10.1016/B978-0-12-816350-4.00004-0).

2. **David K. Wang**, João C. Diniz da Costa, “Silica, Template Silica and Metal Oxide Silica Membranes for High Temperature Gas Separation”, in S. Gray, L. W. Jye, T. Tsuru, Y. Cohen (Eds), *Advanced Materials on Membrane Fabrication and Modification*, CRC Press Taylor & Francis, 2018, 231-273.

3. **David K. Wang**, Rongzhi Chen, Julius Motuzas, Simon Smart, João C. Diniz da Costa, “Rapid Thermal Processing of Microporous Silica Membranes”, in A. Basile, K. Ghasemzadeh (Eds), *Current Trends and Future Developments on (Bio-) Membranes*, Elsevier, 2017, 317-348.

4. Fengwei Xie, Binjia Zhang, **David K. Wang**, “Chapter 2: Starch thermal processing: Technologies at laboratory and semi-industrial scales”, in M. A. Villar, S. H. Barbosa, M. A. García, L. Castillo, & O. V. Lopez (Eds.), *Starch-based Materials in Food Packaging: Processing, Characterization and Applications*, Academic Press, 2017,187-227.

5. Christelle Yacou, **David Wang**, Julius Motuzas, Xiwang Zhang, Simon Smart, João C. Diniz da Costa, Thin Film Ceramic Membranes, in E.V. Hoek and V. Tarabara (Eds), *Encyclopedia of Membrane Science and Technology*, Wiley, 2013, 676-710.

**Refereed journal articles**

2022

1. Gholamreza Vahedi Sarrigani, Jia Ding, Amirali Ebrahimi Ghadi, David Alam, Paul Fitzgerald, Dianne E. Wiley, **David K. Wang**, Interfacially-Confined Polyetherimide Tubular Membranes for H2, CO2 and N2 Separations, *Journal of Membrane Science*, 2022, 655, 120596
2. Jia Ding, Hashim Jalil Khan, Gholamreza Vahedi Sarrigani, Paul Fitzgerald, Amirali Ebrahimi, Olivier Lefebvre, Cao Meng, Hazarel Mohd Harun, Yong Lu, Ali Abbas, Alejandro Montoya, Dianne E. Wiley, **David K. Wang**, Enhancing the active site accessibility of cobalt-silica catalysts for improved Fenton-like performance, *Chemical Engineering Journal*, 2022, 432, 134435.
3. Yi-Chen Lin, Katerina Setnickova, **David K. Wang**, Yi-Fan Chu, Vladimir Sima, Ya-Yu Chiang, Petr Uchytil, Hui-Hsin Tseng, Innovative water-based dynamic liquid bubble membrane generation device for gas/vapour separation, *Chemical Engineering Journal*, 2022, 450, 138233.
4. Jing-Yi Li, **David K. Wang**, Yu-Ting Lin, Ming-Yen Wey, Hui-Hsin Tseng, Homogeneous sub-nanophase network tailoring of dual organosilica membrane for enhancing CO2 gas separation, *Journal of Membrane Science*, 2022, 644, 120170.
5. Jing-Yi Li, Yu-Ting Lin, **David K. Wang**, Hui-Hsin Tseng, Ming-Yen Wey, Effect of heat diffusivity for driving chain stitching of dual-type hybrid organosilica-derived membranes, *Separation and Purification Technology*, 2022, 290, 120848.
6. Wen-Hsiung Lai, **David K. Wang**, Ming-Yen Wey, Hui-Hsin Tseng, Photo-induced poly(styrene-[C1mim][Tf2N])-supported hollow fiber ionic liquid membranes to enhance CO2 separation, *Journal of CO2 Utilization*, 2022, 56, 101871.
7. Wen-Hsiung Lai, **David K. Wang**, Ming-Yen Wey, Hui-Hsin Tseng, ZIF-8/styrene-IL polymerization hollow fiber membrane for improved CO2/N2 separation, *Journal of Cleaner Production*, 2022, 372, 133785.
8. Nur Hafizah Ab Hamid, **David K. Wang**, Simon Smart, Liu Ye, A green, hybrid cleaning strategy for the mitigation of biofouling deposition in the elevated salinity forward osmosis membrane bioreactor (FOMBR) operation, *Chemosphere*, 2022, 288, 132612.
9. Weng Fu, Julius Motuzas, **David Wang**, Christelle Yacou, Anne Julbe, James Vaughan, João C. Diniz da Costa, Salt Storage and Induced Crystallisation in Porous Asymmetric Inorganic Membranes, *Journal of Membrane Science*, 2022, 641, 119872.
10. Bo-Kai Wang, **David K. Wang**, Wen-Che Hou, Photocatalysis by graphitic carbon nitride modified with 0D, 1D, and 2D carbon-based nanomaterials, *Environmental Science: Nano*, 2022, 9, 1879-1887.
11. Kathleen Foo, Yong Yeow Liang, Pei Sean Goh, Abdul L. Ahmad, **David K. Wang**, David F. Fletcher, Comparison of analytical film theory and a numerical model for predicting concentration polarisation in membrane gas separation, *Chemical Engineering Research and Design*, 2022, 185, 281-290.

2021

1. Jia Ding, Gholamreza Vahedi Sarrigani, Jiangtao Qu, Amirali Ebrahimi, Xia Zhong,Wen-Che Hou, Julie M. Cairney, Jun Huang, Dianne E. Wiley, **David K. Wang**, Designing Co3O4/silica catalysts and intensified ultrafiltration membrane-catalysis process for wastewater treatment, *Chemical Engineering Journal*, 2021, 419, 129465.
2. Yi-Chen Lin, Hui-Hsin Tseng, **David K. Wang**, Uncovering the effects of PEG porogen molecular weight and concentration on ultrafiltration membrane properties and protein purification performance, *Journal of Membrane Science*, 2021, 618, 118729.
3. Jing-Yi Li, **David K. Wang**, Hui-Hsin Tseng, Ming-Yen Wey, Solvent effects on diffusion channel construction of organosilica membrane with excellent CO2 separation properties, *Journal of Membrane Science*, 2021, 618, 118758.
4. Yi-Chen Lin, Chi-Min Chao, **David K. Wang**, Kuan-Miao Liu, Hui-Hsin Tseng, Enhancing the antifouling properties of a PVDF membrane for protein separation by grafting branch-like zwitterions via a novel amphiphilic SMA-HEA linker, *Journal of Membrane Science*, 2021, 624, 119126.

2020

1. Liang Liu, Jia Ding, Gholamreza Vahedi Sarrigani, Paul Fitzgerald, Zulkifli Merican Aljunid Merican, Jun-Wei Lim, Hui-Hsin Tseng, Fengwei Xie, Binjia Zhang, **David K. Wang**, Enhanced catalyst dispersion and structural control of Co3O4-silica nanocomposites by rapid thermal processing, *Applied Catalysis B:Environmental*, 2020, 262, 118246.
2. Jia Ding, Gholamreza Vahedi Sarrigani, Hashim Jalil Khan, Haowen Yang, Nur Anis Sohimi, Nur Zaqira Izzati Sukhairul Zaman, Xia Zhong, Anne Mai-Prochnow, **David K. Wang**, Designing Hydrogel-Modified Cellulose Triacetate Membranes with High Flux and Solute Selectivity for Forward Osmosis, *Industrial and Engineering Chemistry Research*, 2020, 59, 20845-20853.
3. Wen-Hsiung Lai, **David K. Wang**, Ming-Yen Wey, Hui-Hsin Tseng, Recycling waste plastics as hollow fiber substrates to improve the anti-wettability of supported ionic liquid membranes for CO2 separation, *Journal of Cleaner Production*, 2020, 276, 124194
4. Nur Hafizah Ab Hamid, **David K. Wang**, Simon Smart, Liu Ye, Achieving stable operation and shortcut nitrogen removal in a long-term operated aerobic forward osmosis membrane bioreactor (FOMBR) for treating municipal wastewater, *Chemosphere*, 2020, 260, 127581.
5. Shang-Shing Wu, Wen-Che Hou, **David K. Wang**, Photocatalytic Reduction of Cr(VI) by Graphene Oxide Materials under Sunlight or Visible Light, *Environmental Science: Nano*, 2020, 7, 2399-2409.
6. Siti Suhailah Rosli, Chung Yiin Wong, Normawati Mohd Yunus, Man Kee Lam, Pau Loke Show, Chin Kui Cheng, **David K. Wang**, Wen Da Oh, Jun Wei Lim, Optimum interaction of light intensity and CO2 concentration in bioremediating N-rich real wastewater via assimilation into attached microalgal biomass as the feedstock for biodiesel production, *Process Safety and Environmental Protection*, 2020, 141, 355-365.
7. Yi-Chen Lin, Kuan-Miao Liu, Chi-Min Chao, **David K. Wang**, Kuo-Lun Tung, Hui-Hsin Tseng, “Enhanced anti-protein fouling of PVDF membrane via hydrophobic-hydrophobic adsorption of styrene-terminated amphiphilic linker”, *Chemical Engineering Research and Design*, 2020, 156, 273-280.
8. Allen K.S. Lau, M.R. Bilad, N.A.H.M. Nordin, Kajornsak Faungnawaki, T. Narkkun, **David K. Wang**, T.M.I. Mahlia, J. Jaafar, “Effect of membrane properties on tilted panel performance of microalgae biomass filtration for biofuel feedstock”, *Renewable and Sustainable Energy Reviews*, 2020, 120, 109666.
9. Nur Hafizah Ab Hamid, Simon Smart, **David K. Wang**, Kaniel Wei Jun Koh, Kalvin Jiak Chern Ng, Liu Ye, “Economic, energy and carbon footprint assessment of integrated forward osmosis membrane bioreactor (FOMBR) process in urban wastewater treatment” [*Environmental Science: Water Research and Technology*](https://www-scopus-com.ezproxy1.library.usyd.edu.au/sourceid/21100468963?origin=resultslist), 2020, 6(1), 153-165.

2019

1. **David K. Wang**, Ralph A. Bauer, Kelan Yan, Ioannis A. Mergos, Zi Yang, Yi Zhou, Hendrik Verweij, “High Selectivity Gas Separation by Interfacial Diffusion Membranes”, *Advanced Materials Interfaces*, 2019, 6(1), 1801273 (**Back cover page feature image** ([Volume 6, Issue 1, January 9, 2019](https://onlinelibrary-wiley-com.ezproxy1.library.usyd.edu.au/toc/21967350/2019/6/1))).
2. Yi-Chen Lin, **David K. Wang**, Jing-Yuan Liu, Aligholi Niaei, Hui-Hsin Tseng, “Low band-gap energy photocatalytic membrane based on SrTiO3–Cr and PVDF substrate: BSA protein degradation and separation application”, *Journal of Membrane Science*, 2019, 586, 326-337.
3. Linghan Meng, Fengwei Xie, Binjia Zhang, **David K. Wang**, Long Yu, “Natural Biopolymer Alloys with Superior Mechanical Properties”, *ACS Sustainable Chemistry & Engineering*, 2019, 7(2), 2792-2802
4. Binjia Zhang, Elliot P. Gilbert, Dongling Qiao, Fengwei Xie, **David K. Wang**, Siming Zhao, Fatang Jiang, “A further study on supramolecular structure changes of waxy maize starch subjected to alkaline treatment by extended-q small-angle neutron scattering”, *Food Hydrocolloids*, 2019, 95, 133-142.

2018

1. Tianlong Zhang, Muthia Elma, Fengwei Xie, Julius Motuzas, Xiwang Zhang, **David K. Wang**, “Rapid Thermally Processed Hierarchical Titania-based Hollow Fibres with Tunable Physicochemical and Photocatalytic Properties”, *Separation and Purification Technology*, 2018, 206, 99-106.
2. Nur Hafizah Ab Hamid, Liu Ye, **David K. Wang**, Simon Smart, Emmanuelle Filloux, Thibault Lebouteiller, Xiwang Zhang, “[Evaluating the membrane fouling formation and chemical cleaning strategy in forward osmosis membrane filtration treating domestic sewage](https://www-scopus-com.ezproxy1.library.usyd.edu.au/record/display.uri?eid=2-s2.0-85057404601&origin=resultslist&sort=plf-f&src=s&sid=6a1e7615140556df359395c09d2a3a51&sot=autdocs&sdt=autdocs&sl=18&s=AU-ID%2857194738295%29&relpos=2&citeCnt=0&searchTerm=)”, *[Environmental Science: Water Research and Technology](https://www-scopus-com.ezproxy1.library.usyd.edu.au/sourceid/21100468963?origin=resultslist" \o "Show source title details)* 2018, 4(12), 2092-2103
3. Yingjun Song, Julius Motuzas, **David K. Wang**, Greg Birkett, Simon Smart, Joao Carlos Diniz da Costa, “Substrate Effect on Carbon/Ceramic Mixed Matrix Membrane Prepared by a Vacuum-Assisted Method for Desalination”, *Processes*, 2018, 6(5), 47.
4. Xing Yang, Sean Sheridan, Lining Ding, **David K. Wang**, Simon Smart, João C. Diniz da Costa, Audra Liubinas, Mikel Duke, “Inter-layer Free Cobalt-doped Silica Membranes for Pervaporation of Ammonia Solutions”, *Journal of Membrane Science*, 2018, 553, 111-116.
5. Julius Motuzas, Christelle Yacou, Rasmus S. K. Madsen, Weng Fu, **David K. Wang**, Anne Julbe, James Vaughan, João C. Diniz da Costa, “Novel Inorganic Membrane for the Percrystallization of Mineral, Food and Pharmaceutical Compounds”, *Journal of Membrane Science*, 2018, 550, 407-415.
6. Jun-Wei Lim, Hayyiratul Fatimah Mohd Zaid, Mohamed Hasnain Isa, Wen-Da Oh, Rohana Adnan, Mohammed J.K. Bashir, Worapon Kiatkittipong, **David K. Wang**, “Shielding immobilized biomass cryogel beads with PAC for the simultaneous adsorption and biodegradation of 4-chlorophenol”, [*Journal of Cleaner Production*](https://www-scopus-com.ezproxy1.library.usyd.edu.au/sourceid/19167?origin=resultslist), 2018, 205, 828-835.
7. Hong Yang, **David K. Wang**, Julius Motuzas, João C. Diniz da Costa, “Hybrid vinyl silane and P123 template sol-gel derived carbon silica membrane for desalination”, *Journal of Sol-Gel Science and Technology*, 2018, 85, 280-289.

2017

1. Yingjun Song, **David K. Wang**, Greg Birkett, Simon Smart, João C. Diniz da Costa, “Vacuum film etching effect of carbon alumina mixed matrix membranes”, *Journal of Membrane Science*, 2017, 541, 53-61.
2. Binjia Zhang, Fengwei Xie, Julia Shamshina, Robin Rogers, Tony McNally, **David K. Wang**, Peter Halley, Rowan Truss, Si-ming Zhao, Ling Chen, “Facile preparation of starch-based electroconductive films with ionic liquid”, *ACS Sustainable Chemistry & Engineering*, 2017, 5(6), 5457-5467.
3. Dongling Qiao, Binjia Zhang, Fatang Jiang, Siming Zhao, Fengwei Xie, **David K. Wang**, Jie Zhu, “Hydration-induced crystalline transformation of starch polymer under ambient conditions”, *International Journal of Biological Macromolecules*, 2017, 103, 152-157.
4. Binjia Zhang, Fengwei Xie, **David K. Wang**, Siming Zhao, Meng Niu, Dongling Qiao, Shanbai Xiong, Fatang Jiang, Jie Zhu, Long Yu, “An improved approach for evaluating the semicrystalline lamellae of starch granules by synchrotron SAXS”, *Carbohydrate Polymers*, 2017, 158, 29-36
5. Siti Nurehan Abd Jalil, **David K. Wang**, Chrystelle Yacou, Julius Motuzas, Simon Smart, João C. Diniz da Costa, “Vacuum-assisted tailoring of pore structures of phenolic resin derived carbon membranes”, *Journal of Membrane Science*, 2017, 525, 240-248.
6. Hong Yang, Muthia Elma, **David K. Wang**, Julius Motuzas, João C. Diniz da Costa, “Interlayer-free hybrid carbon-silica membranes for processing brackish to brine salt solutions by pervaporation”, *Journal of Membrane Science*, 2017, 523, 197-204.
7. **David K. Wang**, Muthia Elma, Julius Motuzas, Wen-Che Hou, Fengwei Xie, Xiwang Zhang, “Rational design and synthesis of molecular-sieving, photocatalytic, hollow fiber membranes for advanced water treatment applications”, *Journal of Membrane Science*, 2017, 524, 163-173.
8. Shuaifei Zhao, Shuiping Yan, **David K. Wang**, Hong Qi, Lixin Xue, Paul H.M. Feron, “Simultaneous heat and water recovery from flue gas by membrane condensation: Experimental investigation” *Applied Thermal Engineering*, 2017, 113, 843-850.
9. Shengnan Wang, **David K. Wang**, Simon Smart, João C. Diniz da Costa, “Improved stability of ethyl silicate interlayer-free membranes by the rapid thermal processing (RTP) for desalination”, *Desalination*, 2017, 402, 25-32.
10. Adi Darmawan, Linda Karlina, Yayuk Astuti, Sriatun, **David K. Wang**, Julius Motuzas, João C. Diniz da Costa, “Interlayer free - Nickel doped silica membranes for desalination”, *IOP Conference Series: Materials Science and Engineering*, 2017, 172(1), 012001.

2016

1. Siti Nurehan Abd Jalil, **David K. Wang**, Chrystelle Yacou, Julius Motuzas, Simon Smart, João C. Diniz da Costa “Molecular weight cut-off and structural analysis of vacuum-assisted titania membranes for water separation”, *Materials*, 2016, 9(11), 938.
2. **David K. Wang**, Muthia Elma, Julius Motuzas, Wen-Che Hou, Diego R. Schmeda-Lopez, Tianlong Zhang, Xiwang Zhang, “Physicochemical and photocatalytic properties of carbonaceous char and titania composite hollow fibers for wastewater treatment”, *Carbon*, 2016, 109, 182-191.
3. Hui Peng, Srinivas Varanasi, **David K. Wang**, Idriss Blakey, Firas Rasoul, Anne Symons, David J.T. Hill, Andrew K. Whittaker, “Synthesis, swelling, degradation and cytocompatibility of crosslinked PLLA-PEG-PLLA networks with short PLLA blocks”, *European Polymer Journal*, 2016, 48, 448-464.
4. Yingjun Song, **David K. Wang**, Greg Birkett, Wayde Martens, Simon Smart, Mikel Duke, João C. Diniz da Costa, “Mixed matrix carbon molecular sieve and alumina (CMS-Al2O3) membranes”, *Scientific Reports*, 2016, 6, 30703.
5. Shengnan Wang, **David K. Wang**, Julius Motuzas, Simon Smart, João C. Diniz da Costa, “Rapid thermal treatment of interlayer-free ethyl silicate 40 derived membranes for desalination”, *Journal of Membrane Science*, 2016, 516, 94-103.
6. Christina Zelma, **David K. Wang**, Imelda Keen, David J.T. Hill, Anne L. Symons, Laurence Walsh, Firas Rasoul, “Synthesis and characterization of POSS-(PAA)8 star copolymers and GICs for potential dental applications”, *Dental Materials*, 2016, 32, e82-e92.
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4. Liang Liu, **David K. Wang**, Peter Kappen, Dana L. Martens, Simon Smart, João C. Diniz da Costa, “Hydrothermal stability investigation of microporous silica containing long-range ordered cobalt oxide clusters by XAS”, *Physical Chemistry Chemical Physics*, 2015, 17, 19500-19506.
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7. Muthia Elma, **David K. Wang**, Christelle Yacou, Julius Motuzas, João C. Diniz da Costa, “High performance interlayer-free mesoporous cobalt oxide silica membranes for desalination applications”, *Desalination*, 2015, 365, 308-315.
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3. **David K. Wang**, João C. Diniz da Costa, Simon Smart, “Development of rapid thermal processing of tubular cobalt oxide silica membranes for gas separations”, *Journal of Membrane Science*, 2014, 456, 192-201.
4. **David K. Wang**, Xiwang Zhang, João C. Diniz da Costa, “Claisen-type degradation mechanism of cellulose triacetate membranes in ethanol-water mixtures”, *Journal of Membrane Science*, 2014, 454, 119-125.
5. Liang Liu, **David K. Wang**, Dana L. Martens, Simon Smart, Ekaterina Strounina, João C. Diniz da Costa, “Physicochemical characterization and hydrothermal stability investigation of cobalt-incorporated silica xerogels”, *RSC Advances*,2014, 4, 18862-70.
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1. Christopher R. Miller, **David K. Wang**, Simon Smart, João C. Diniz da Costa, “Switchable gas gating effect of cobalt doped ethoxy polysiloxane (ES40) membranes”, *Scientific Reports*, 2013, 3, 1648.
2. **David K. Wang**, Srinivas Varanasi, Peter M. Fredericks, David J.T. Hill, Anne L. Symons, Andrew K. Whittaker, Firas Rasoul, “FT-IR characterization and hydrolysis of PLA-PEG-PLA based copolyester hydrogels with short PLA segments and a cytocompatibility study”, *Journal of Polymer Science: Part A Polymer Chemistry*, 2013, 51, 5163-5176 (Front cover page feature image ([Volume 51, Issue 24 (pages i–ii)](http://onlinelibrary.wiley.com/doi/10.1002/pola.26993/abstract)).
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4. Xiwang Zhang, Ziyao Ning, **David K. Wang**, João C. Diniz da Costa, “A novel ethanol dehydration process by forward osmosis”, *Chemical Engineering Journal*, 2013, 232, 397-404.
5. Muthia Elma, Christelle Yacou, João C. Diniz da Costa, **David K. Wang**, “Performance and long-term stability of mesoporous silica membranes for desalination”, *Membranes*, 2013, 3, 136-150.

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1. Muthia Elma, Christelle Yacou, **David K. Wang**, Simon Smart, João C. Diniz da Costa, “Microporous Silica Based Membranes for Desalination”, *Water*, 2012, 4(3), 629-649.
2. **David K. Wang**, David J.T. Hill, Firas Rasoul, Andrew K. Whittaker, “Biodegradable hydrogels based on a Boltorn hyperbranched polyester and poly(ethylene glycol) diacrylate for drug delivery applications: synthesis and characterization”, *Journal of Polymer Science: Part A Polymer Chemistry*; 2012, 50(6), 1143-1157.
3. **David K. Wang**, Firas Rasoul, David J.T. Hill, Graeme R. Hanson, Christopher J. Noble, Andrew K. Whittaker, “The role of residual Cu(II) from click-chemistry in the catalyzed hydrolysis of Boltorn polyester-based hydrogels”, *Soft Matter*, 2012, 8(2), 435-445.
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1. **David Wang**, David J.T. Hill, Firas Rasoul, Andrew K. Whittaker, “A study of the swelling and model protein release behaviours of radiation formed poly(N-vinyl 2-pyrrolidone-co-acrylic acid) hydrogels”, *Radiation Physics and Chemistry*, 2011, 80(2), 207-212.
2. **David Wang**, Peter M. Fredericks, Athir Haddad, David J.T. Hill, Firas Rasoul, Andrew K. Whittaker, “Hydrolytic degradation of POSS-PEG-lactide hybrid hydrogels”, *Polymer Degradation and Stability*, 2011, 96(1) 123-130.

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1. **David Wang**, David J.T. Hill, Hui Peng, Anne Symons, Srinivas Varanasi, Andrew K. Whittaker, Firas Rasoul, “Development of injectable biodegradable PEG-based hydrogels: swelling and degradation investigations”, *Macromolecular Symposia*, 2010, 296, 233-237.

**Patent**

1. Hui-Hsin Tseng, Petr Uchytil, Vladimír Šíma, Roman Petrychkovych, Kateřina Setničková, David Wang, I656906 APPARATUS AND METHOD FOR GAS SEPARATION, 21/04/2019 – 12/07/2038

**Conference presentations** (as the presenter)

Invited Presentations

1. **D. Wang**, “*Enhanced Catalyst Dispersion and Structural Control of Cobalt Tetroxide Silica Nanocomposite by Rapid Thermal Processing*” in 2nd International Conference on Energy-efficient Separation; Melbourne, Australia (November 2019).
2. **D.K.Wang**, “*Polymeric to Inorganic Materials for Membrane Separation Applications*” in DJTH-80 Symposium, Brisbane, Australia (December 2018)

In honouring the scientific achievements of Prof. David Hill, who is one of the most influential Australian polymer scientists of the past five decades, having made important contributions in the fields of polymer degradation, the chemistry of copolymerization and biomedical polymers, DJTH-80 was held to celebrate the progress of Polymer Science over the past half century and Dave’s important role as a scientist, teacher and mentor. I was one of the invited speakers along with other distinguished professors including Tom Davis, Martina Stenzel, Graeme George, David Lewis, Anita Hill, San Thang, John Forsythe to name a few (<https://polymer-chemistry.group.uq.edu.au/article/2018/09/symposium-honouring-scientific-achievements-david-hill>).

1. **D.K.Wang**, T. Zhang, M. Elma, J. Motuzas, X. Zhang, “*Design of photocatalytic, rapid thermal processed inorganic membranes for water treatmen*t” in 1st International Conference on Bioinspired Materials and Membranes and 1st International Conference on Energy-efficient Separation; Melbourne, Australia (January 2018).
2. **D.K. Wang**, “*Unconventional, New Approaches to Inorganic Membrane Manufacturing for Treatment of Gases and Wastewaters*” and “*Membrane Manufacturing Processes*” in International Workshop on Materials, Membranes, Energy and Water Management; Universitas Lambung Mangkurat, Banjarmasin, Indonesia (December 2017).
3. **D. Wang**, S. Varanasi, D.J.T. Hill, H. Peng, F. Rasoul and A.K. Whittaker, “*Rational design of polymeric hydrogels for targeted applications: the study of network morphology and degradation by cryogenic scanning electron microscopy*” in 38th Society for Cutaneous Ultrastructure Research Meeting; Brisbane, Australia (May 2011).

Invited Seminars

1. **D.K. Wang**, “*Expedite Engineering of Molecular Sieving Membranes for Gas Processing and Water Treatment Applications*”, to Chemical Engineering Association in Hiroshima and Department of Chemical Engineering, University of Hiroshima, Japan (June 2019).
2. **D.K. Wang**, “*Design of Rapid Thermal Processed Inorganic Membranes for Gas Processing and Water Treatment Applications*”, to Department of Fundamental & Applied Sciences, Universiti Teknologi Petronas, Perak, Malaysia (December 2017).
3. **D.K. Wang**, “*Unconventional, New Approaches to Inorganic Membrane Manufacturing for Water Production*” and “*Scientific Paper Writing and Publication Strategy*”, at HYMFAST seminar, Universiti Teknologi Mara Cawangan Pulau Pinang, Penang, Malaysia (December 2017).
4. **D.K. Wang**, M. Elma, J. Motuzas, W-C. Hou, D.R. Schmeda Lopez, X. Zhang, J. Diniz da Costa, “*Rational design of robust photocatalytic hollow fiber membranes for water purification and separation*”, to Department of Environmental Engineering, National Cheng Kung University, Tainan City, Taiwan (January 2015).
5. **D.K. Wang**, S. Varanasi, D.J.T. Hill, F. Rasoul, A. Symons, A.K. Whittaker, “*Rational design and biological evaluation of polymeric hydrogels for periodontal tissue engineering*”, to Department of Occupational Safety & Health, Chung Shan Medical University, Taichung, Taiwan (December 2014).
6. **D.K. Wang**, M. Elma, J. Motuzas, W-C. Hou, D.R. Schmeda-Lopez, X. Zhang, J. Diniz da Costa, “*Designing robust photocatalytic hollow fibres for concurrent water purification and separation*”, to Department of Environmental Engineering, National Chung Hsing University, Taichung, Taiwan (December 2014).

Oral Presentations

1. **D.K. Wang**, J. Ding, G.V. Sarrigani, A.E. Ghadi, D. Wiley, R. Bauer, K. Yan, I. Mergos, Z. Yang, Y. Zhou, H. Verweij, “*Interfacial Diffusion Membranes for Highly Selective CO2 Separation: On-going Development*”, in 12th International Congress on Membrane and Membrane Processes; Live and On-demand (December 2020).
2. **D.K. Wang**, H. Verweij, “*High selectivity gas separation by interfacial diffusion membranes*”, in 12th Aseanian Membrane Society Conference; Jeju Island, South Korea (July 2019).
3. **D.K. Wang**, S. Wang, S. Smart, J.C. Diniz da Costa, “*Rational Design of Rapid Thermal Processing of Tubular Silica-based Membranes for Gas and Water Separations*”, in 14th International Conference in Inorganic Membranes; Atlanta, USA (July 2016).
4. **D.K. Wang**, M. Elma, J. Motuzas, W-C Hou, D.R. Schmeda-Lopez, X. Zhang, J. Diniz da Costa, “*Designing titania carbon composite for photocatalytic membranes*”, in 9th International Mesostructured Material Symposium; Brisbane, Australia (August 2015).
5. **D.K. Wang**, X. Zhang, Z. Ning, J. Diniz da Costa, “*Cellulose triacetate membranes and brine concentrate for alcohol dehydration: A forward osmosis case study*”, in 2nd International Conference on Desalination using Membrane Technology, Singapore (July 2015).
6. **D.K. Wang**, M. Elma, J. Motuzas, W-C Hou, D.R. Schmeda Lopez, X. Zhang, J. Diniz da Costa, “*Robust photocatalytic titania carbon hollow fiber membranes for concurrent water purification and separation*”, in 9th Conference of Aseanian Membrane Society; Taipei, Taiwan (July 2015).
7. **D.K. Wang**, X. Zhang, J. Motuzas, D.R. Schmeda Lopez, J. Diniz da Costa, “*Robust photocatalytic titania composite hollow fibers for water purification*” in 13th International Conference in Inorganic Membranes; Brisbane, Australia (July 2014).
8. **D.K. Wang**, M. Elma, C. Yacou, J. Diniz da Costa, “*Mesoporous silica-based membranes for desalination applications*” in Pre-Conference Workshop on Membrane Research at UQ and QUT; Brisbane, Australia (July 2014).
9. **D.K. Wang**, S. Smart, J.C. Diniz da Costa, “*Development of rapid thermal processing of tubular cobalt oxide silica membranes for gas separations*” in 8th International Membrane Science & Technology Conference; Melbourne, Australia (November 2013).
10. **D.K. Wang**, C.R. Miller, S. Smart, J.C. Diniz da Costa, “*Reversible gas gating effect of cobalt silica membrane based on ethoxy polysiloxane (ES40)*”, in Membrane Society of Australasia 3rd Early Career Researchers Membrane Symposium; Brisbane, Australia (November 2012).
11. D.L. Martens, **D.K. Wang**, S. Smart, J.C. Diniz da Costa, “*Enhancing the hydrothermal stability of Co-doped silica by sol-gel seeding”* in Membrane Society of Australasia 3rd Early Career Researchers Membrane Symposium; Brisbane, Australia (November 2012).
12. **D. Wang**, D.J.T. Hill, F. Rasoul and A.K. Whittaker, “*The study of hydrogel network morphology and degradation by cryogenic scanning electron microscopy*” in 21st Australian Conference on Microscopy & Microanalysis; Brisbane, Australia (July 2010); AMMS Student Bursary Award.
13. **D. Wang**, D.J.T. Hill, F. Rasoul and A.K. Whittaker, “*Novel synthesis of poly(ethylene glycol)-based hydrogel crosslinked by hyperbranched amphiphilic polymers*” in 239th American Chemical Society, Spring 2010 National Meeting & Exposition; San Francisco, USA (March 2010).
14. **D. Wang**, A. Haddad, D.J.T. Hill, I. Keen, F. Rasoul and A.K. Whittaker, “*Syntheses of in-situ forming biodegradable hydrogels crosslinked by amphiphilic polyhedral oligomeric silsesquioxane*” in 11th Pacific Polymer Conference/31st Australasian Polymer Symposium; Cairns, Australia (December 2009).
15. **D. Wang** (**Honourable Mention; Treolar Oral Prize**), F. Rasoul, A.K. Whittaker and D.J.T. Hill, “*Design and synthesis of injectable, biodegradable and in situ-curable hydrogels for drug delivery in dentistry*” in 30th Australasian Polymer Symposium; Melbourne, Australia (December 2008).
16. **D. Wang**, J. Cameron, F. Rasoul, A.K. Whittaker and D.J.T. Hill, “*The development of acrylic-based hydrogels for the therapeutic delivery of protein complexes*” in 10th Pacific Polymer Conference; Osaka, Japan (December 2007).

Poster Presentations

1. **D.K. Wang**, M. Elma, J. Motuzas, W-C. Hou, D.R. Schmeda-Lopez, X. Zhang, “*Physicochemical and Photocatalytic Properties of Carbonaceous Char and Titania Composite Hollow Fibers for Wastewater Treatment*”, in 26th Annual Meeting North America Membrane Society; Seattle, USA (May 2016); **European Membrane Society Young Academic Award**.
2. M. Elma, **D.K. Wang**, C. Yacou, J. Diniz da Costa, “*Interlayer-free P123 carbonised template silica membranes for desalination with reduced salt concentration polarisation*”, in 9th International Mesostructured Material Symposium; Brisbane, Australia (August 2015) and 2nd International Conference on Desalination using Membrane Technology, Singapore (July 2015).
3. L. Liu, **D.K. Wang**, D.L. Martens, S. Smart, J.C. Diniz da Costa, “*Microporous cobalt oxide silica membranes on macroporous tubular alumina supports via seeding sol-gel technique*” in 8th International Membrane Science & Technology Conference; Melbourne, Australia (November 2013).
4. **D.K. Wang**, D.L. Martens, S. Smart, J.C. Diniz da Costa, “*The effect of seeding of cobalt/silica colloidal sol or gel on microporous silica membranes and their hydrostability*” in 12th International Conference on Inorganic Membranes; Enschede, The Netherlands (July 2012).
5. **D. Wang**, J. Cameron, F. Rasoul, A.K. Whittaker and D.J.T. Hill, “*The development of acrylic hydrogels for the therapeutic delivery of protein complexes*” in 7th Discovery Science Biotechnology Conference; Brisbane, Australia (July 2007); **UQ Biotechnology Student Bursary Award**.
6. **D. Wang**, J. Cameron, F. Rasoul, A.K. Whittaker and D.J.T. Hill, “*The development of acrylic hydrogels for the therapeutic delivery of protein complexes*” in 29th Australasian Polymer Symposium; Hobart, Australia (February 2007).