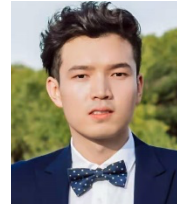


# Curriculum Vitae

## Dr. Pengrui Jin



Date of birth: June 23<sup>rd</sup>, 1992

Nationality: Chinese

Gender: Male

Languages: Chinese (mother tongue), English (advanced level)

## CONTACT

EPFL Valais Wallis

EPFL SB ISIC LAS

Rue de L'Industrie 17, Case Postale 440

1951 Sion, Suisse

Tel: (+41) 76 546 11 32

Email: [pengrui.jin@epfl.ch](mailto:pengrui.jin@epfl.ch); [pengrui.jin@hotmail.com](mailto:pengrui.jin@hotmail.com)

## EDUCATION AND WORK

June. 2022 to now	Postdoc	École Polytechnique Fédérale de Lausanne (EPFL) –Sion, Switzerland Advisor: prof. Kumar Varoon Agrawal
Jan. 2022-June. 2022	Postdoc	Chemical Engineering, KU Leuven, Belgium Advisor: prof. Bart Van der Bruggen
Oct. 2018-Dec. 2021	Ph.D.	Chemical Engineering, KU Leuven, Belgium Supervisor: prof. Bart Van der Bruggen
Jun. 2021-Sep. 2021	Visiting Researcher	School of Energy and Environment, City University of Hong Kong, Hong Kong Supervisor: prof. Alicia K.J. An
Sep. 2015-Jun. 2018	M.Eng.	College of Resources and Environmental Science, Chongqing University, China Supervisor: Chuan Huang
Sep. 2011-Jun. 2015	B.Sc.	College of Materials Science and Engineering, Chongqing University of Technology, China

## RESEARCH INTERESTS

Pengrui's research work focuses on developing functional materials and membrane technology to solve global challenges in climate change, environment, energy, water, and healthcare. Current active areas include the design and fabrication of membranes for molecular-level separations ranging from carbon capture, key oil and dye industry challenges to the synthesis of uniquely functional materials.

Utilizing solar energy for water treatment to become a readily available technology for developing countries is also one of his research interests.

The development of nanoporous nanosheet membranes for application in energy generation, carbon capture, and renewable chemicals.

Growing role of modeling and simulations including Machine learning and Artificial Intelligence.

### Editorial activities:

I served as Early Career Editor of *Results in Engineering* (RINENG, Elsevier)

I have been invited for review of manuscripts in 14 international scientific journals: *Industrial & Engineering Chemistry Research*, *ACS Applied Materials & Interfaces*, *Science of the Total Environment*, *Separation and Purification Technology*, *Chemical Engineering Science*, *Greenhouse Gases*, *Journal of applied polymer science*, *Journal of Chemical Technology & Biotechnology*, and *Micro & Nano Letters*.

### Educational supervision

1. Positively charged nanofiltration membrane based on Tris(3-aminopropyl)amine

Michiel Robeyn, MSc student, KU Leuven, Belgium (Sept. 2019 - Jun.2020)

2. Ultra-Permeable positively charged desalination membranes modulated by covalent organic framework

Victor Mattelaer, MSc student, KU Leuven, Belgium (Sept. 2020 - Jun.2021)

3. Fouling mitigation of separation surface in bioprocessing

Ruben Dumas, MSc student, KU Leuven, Belgium (Sept. 2020 - Jun.2021)

4. Orientation process technology

Chiel Raskin, Enthusiastic internship student, UCLL, Belgium (Sept. 2020 - Oct. 2020)

## CONFERENCES

1. “Polyarylene thioether sulfone/sulfonated sulfone nanofiltration membrane with enhancement of rejection and permeability via molecular design.”, **Pengrui Jin**, Bart Van der Bruggen\* in The 12th International Congress on Membranes and Membrane Process (ICOM 2020), London, online: Live and On-demand, Dec. 10, 2020. (**Keynote oral presentation**)
2. “Zero-calorie sweetener-based polyester loose nanofiltration membrane with fast water transport for efficient dye/salt separation”, **Pengrui Jin**, Bart Van der Bruggen\* in the Membrane Society of Australasia (MSA) Annual Meeting 2020, Sydney, online: Live, Nov. 24, 2020. (**Oral presentation**)
3. “Simultaneous separation of H<sub>2</sub>S and CO<sub>2</sub> from biogas by gas-liquid membrane contactor using single and mixed absorbents”, **Pengrui Jin**, Chuan Huang\* in The 5th International Conference and Expo on Separation Techniques, in Paris, France, Oct. 23, 2017. (**Oral presentation**)

## Honors

FWO Junior Postdoctoral Fellowship, Research Foundation Belgium	June, 2022
Postdoctoral Mandate, KU Leuven (Belgium).	July, 2021
FWO Travel award (visiting research in HK), Belgium Government	May, 2021
EMS Travel award_ICOM 2020, European Membrane Society	Oct, 2020
The outstanding Master Thesis in Chongqing, China	Oct, 2019
National scholarship for graduate students (Top 2%), Chinese Government	Oct, 2017
Awarded outstanding postgraduate (Top 10%), Chongqing University, China	Dec, 2016
The First Prize Scholarship, Chongqing University, China	Oct, 2017
The second Prize Scholarship, Chongqing University, China	Oct, 2016
The First Prize Scholarship, Chongqing University, China	Oct, 2015

## PUBLICATIONS

1. **P. Jin**, S. Shan, S. Mazinani, Y. Chew, D. Mattia, B. Van der Bruggen\*, Nanoimprinted polyamide membranes for ultrafast desalination and precise molecular sieve with low fouling, **Pending Submission**.
2. **P. Jin**, P. Luis, B. Van der Bruggen\*, Introducing porous organic molecules into advanced membrane separation, **Pending Submission**.
3. **P. Jin**, X. Zhang, K. Simoens, A. Volodine, X. Zhang, K. Bernaerts, R. Dewil, P. Luis, and B. Van der Bruggen\*, Ionic liquid-based antibacterial loose nanofiltration membrane, **Pending Submission**.
4. X. Zhang, **P. Jin\***, S. Depuydt, Z. Xu, B. Van der Bruggen\*, A PEI/TMC membrane modified with

- an ionic liquid with enhanced permeability and antibacterial properties for the removal of heavy metal ions, *Journal of Hazardous Materials*, 2022, 435, 129010.
5. Q. Gao, B. Weng, **P. Jin**\*, S. Yuan, X. Gui, J. Zheng, D. Xu, Y. Wang, A. Volodine, B. Van der Bruggen\*, Rapid solute transfer photocatalytic membrane: the combination of host-guest interaction and photocatalyst load, *Chemical Engineering Journal*, 2022, 446, 137316.
  6. X. Zhang, **P. Jin**\*, D. Xu, J. Zheng, Z. Zhan, Q. Gao, S. Yuan, Z. Xu, B. Van der Bruggen\*, Triethanolamine modification produces ultra-permeable nanofiltration membrane with enhanced removal efficiency of heavy metal ions. *Journal of Membrane Science*, 2022, 644, 120127.
  7. **P. Jin**, S. Chergaoui, J. Zheng\*, A. Volodine, X. Zhang, Z. Liu, P. Luis, B. Van der Bruggen\*, Low-pressure highly permeable polyester loose nanofiltration membranes tailored by natural carbohydrates for effective dye/salt fractionation. *Journal of Hazardous Materials*, 2022, 421, 126716.
  8. **P. Jin**, V. Mattelaer, S. Yuan\*, K. Simoens, Q. Zhang, K. Bernaerts, R. Dewil, B. Van der Bruggen\*, Hydrogel assisted interfacial polymerization for high flux positively charged nanofiltration membranes with antimicrobial properties via Ag modification. *Separation and Purification Technology*, 2022, 284, 120295.
  9. **P. Jin**, J. Zheng, Q. Gao, A.K. An, B. Van der Bruggen\*, Loose nanofiltration membranes for the treatment of textile wastewater: a review. *Journal of Membrane Science and Research*, 2022, 8, 538529. (Special Issue: In Honor and Memory of Prof. Yuri Yampolskii)
  10. P. Gao<sup>1</sup>, **P. Jin**<sup>1</sup>, R. Dumas, J. Huang, A. Benozie Asha, R. Narain, B. Van der Bruggen, X. Yang\*, A prebiotic chemistry inspired one-step functionalization of zwitterionic nanofiltration membranes for efficient molecular separation. *Journal of Membrane Science Letters*, 2022, 2, 100013.
  11. **P. Jin**, J. Zhu\*, S. Yuan, G. Zhang, A. Volodine, M. Tian, J. Wang, P. Luis, B. Van der Bruggen\*, Erythritol-based polyester loose nanofiltration membrane with fast water transport for efficient dye/salt separation. *Chemical Engineering Journal*, 2021, 406, 126796.
  12. **P. Jin**, S. Yuan\*, G. Zhang, J. Zhu, J. Zheng, P. Luis, B. Van der Bruggen\*, Polyarylene thioether sulfone/sulfonated sulfone nanofiltration membrane with enhancement of rejection and permeability via molecular design. *Journal of Membrane Science*, 2020, 608, 118241.
  13. **P. Jin**, M. Robeyn, J. Zheng, S. Yuan\*, B. Van der Bruggen\*, Tailoring Charged Nanofiltration Membrane Based on Non-Aromatic Tris (3-aminopropyl) amine for Effective Water Softening. *Membranes*, 2020, 10, 251.
  14. **P. Jin**, C. Huang\*, Y. Shen, X. Zhan, X. Hu, L. Wang. Simultaneous separation of H<sub>2</sub>S and CO<sub>2</sub> from biogas by gas-liquid membrane contactor using single and mixed absorbents. *ACS Energy & Fuels*, 2017, 31, 11117-11126.

15. **P. Jin**, C. Huang\*, J. Li, Y. Shen, L. Wang. Surface modification of poly(vinylidene fluoride) hollow fibre membranes for biogas purification in a gas-liquid membrane contactor system. *Royal Society Open Science*, 2017, 4, 171321.
16. **P. Jin**, C. Huang\*, Yifu Li, Jiayang Li, and Liao Wang. Fabrication of a superhydrophobic poly(vinylidene fluoride) hollow fiber membrane by spray deposition. *Micro & Nano Letters*, 2017, 13, 223-227.
17. **P. Jin**, C. Huang\*, Y. Shen, Y. Li, L. Wang. Enhanced Simultaneous Separation of H<sub>2</sub>S and CO<sub>2</sub> by Amino Acid Salt Promoted Potassium Carbonate Solution in a Hollow Fiber Membrane Contactor. *Fresenius Environmental Bulletin*, 2017, 1, 1081.
18. J. Sun, W. Jia, J. Guo, N.K. Khanzada, **P. Jin**, P.W. Wong, X. Zhang, A.K. An. Amino-embedded carbon quantum dots incorporated thin-film nanocomposite membrane for desalination by pervaporation. *Desalination*, 2022, 533, 115742.
19. J. Zheng, Rui Zhao, A. Uliana, Yanyan Liu, D. de Donnea, X. Zhang, D. Xu, Q. Gao, **P. Jin**, Y. Liu, A. Volodine, J. Zhu\*, B. Van der Bruggen\*, Erythritol-based polyester loose nanofiltration membrane with fast water transport for efficient dye/salt separation. *Chemical Engineering Journal*, 2022, 434, 134705.
20. J. Zheng, X. Zhang, G. Li, G. Fei, **P. Jin**, Y. Liu, C. Wouters, G. Meir, Y. Li, Bart Van der Bruggen. Selective removal of heavy metals from saline water by nanofiltration. *Desalination*, 2022, 525, 115380.
21. Q. Gao, **P. Jin**, L. Wang, Y. Xing, X. Gui, P. Van Puyvelde, B. Van der Bruggen. Removal of organic pollutants in coking wastewater based on coal-based adsorbents: A pilot-scale study of static adsorption and flotation. *Journal of Environmental Chemical Engineering*, 2021, 9, 106844.
22. X. Zhang, Z. M. Zhan, F. Y. Cheng, Z. L. Xu, **P. Jin**, Z. P. Liu, B. Van der Bruggen\*, Thin-Film Composite Membrane Prepared by Interfacial Polymerization on the Integrated ZIF-L Nanosheets Interface for Pervaporation Dehydration. *ACS Applied Materials & Interfaces*, 2021, 13, 39819.
23. J. Zheng, Y. Liu, J. Zhu, **P. Jin**, T. Croes, A. Volodine, S. Yuan\*, B. Van der Bruggen\*, Sugar-based membranes for nanofiltration. *Journal of Membrane Science*, 619 (2020) 118786.
24. S. Yuan, G. Zhang, J. Zheng, **P. Jin**, J. Zhu, J. Yang, S. Liu, P. Van Puyvelde, B. Van der Bruggen\*, Sugar-based membranes for nanofiltration. *Journal of Membrane Science*, 610 (2020) 118282.
25. Y. Shen, C. Huang\*, **P. Jin**, X. Xing, L. Wang, CO<sub>2</sub> capture by 1-butyl-3-methylimidazolium tetrafluoroborate-promoted potassium carbonate solution in hollow fiber membrane contactors. *Fresenius Environmental Bulletin*, 28 (2020) 5164-5171.

26. Y. Li, L. Wang, X. Hu, **P. Jin**, X. Song. Surface modification to produce superhydrophobic hollow fiber membrane contactor to avoid membrane wetting for biogas purification under pressurized conditions. *Separation and Purification Technology*. 2018, 194, 222.
27. Y. Li, **P. Jin**, X. Song, L. Wang. Removal of carbon dioxide from pressurized landfill gas by physical absorbents using a hollow fiber membrane contactor. *Chemical Engineering and Processing: Process Intensification*. 2017, 121, 149.