

Ahmad B. Albadarin, BSc, MBA, PhD

ASSOCIATE RESEARCH PROFESSOR

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EDUCATION

- **PhD in Chemical Engineering – Particle Engineering** | Queen’s University Belfast (QUB), United Kingdom.
- **Master of Business Administration** | University of Limerick (UL), Ireland.
- **BSc in Analytical Chemistry** | Al Albayt University, Jordan.

CAREER HIGHLIGHTS

- Total novel research and curriculum development funds to date – **€ 2,420,000 since 2015.**
- Full length peer-reviewed research articles – **137 Articles & 2 Awarded Patents since 2011.**
- **5835 Scopus citations & 7120 Google-Scholar citations: Scopus h index: 40; G-Scholar h index: 44**

PROFESSIONAL EXPERIENCE

Associate Research Professor – Chemical Engineering Department

American University of Beirut (AUB) | 2022 – Current

- Providing novel ideas, writing proposals and securing national and international funding. Performing cutting edge research and publishing high quality scientific articles.
- Supervision of research students (PhD & MSc); designing and providing guidance for research activities with focus on the use of advanced materials such as MOFs and bioactives for drug delivery systems.
- Course coordination and teaching of various modules including Process Safety & Loss prevention, Separation Processes and Polymer Science.
- Working with the Al Ghurair Foundation to develop an online MSc degree in Sustainable Design and Bio-based Circular Economy, and regularly meet with academic colleagues to review students’ performance.

Principal Investigator & Associate Lecturer – Pharmaceutical & Chemical Engineering

University of Limerick (UL) | 2020 – 2021

- Successfully led two innovation partnerships and a Covid response fund for the development and formulation of Engineered Inhalable Antiviral Composites for Pulmonary Delivery.
- Developed a project and secured funding within the Erasmus+ program in collaboration with EU and MENA partners (both industry and academia) to improve the Engineering curricula for sustainable manufacturing.
- Supervision for research students (PhD & MSc); designing and providing guidance for research activities.
- Part-time teaching within the Sciences & Engineering School: Pharmaceutical and Chemical Engineering and Thermodynamics.

Lecturer & Principal Investigator – Pharmaceutical & Chemical Engineering

University of Limerick (UL) | 2018 – 2019

- Lecturing and curriculum development of various modules adopting a research-led teaching strategy to include both fundamental and real-life applications equipping the students with the necessary up to date competencies which in return will enhance their employability.
- Modules; taught the following modules: Analytical Chemistry Lab, Thermodynamics and Process Engineering, (Bio)Pharmaceutical Processing.
- Regularly meet with academic colleagues to review students’ performance and identify areas for improvement.
- Led the PMTC and worked with the TTO team and stakeholders throughout the review process and created a detailed business plan that successfully secured €5million for the Centre’s second round of funding.

Senior Research Fellow – Drug Formulation & Process Optimization

University of Limerick (UL) | 2014 – 2017

- Developed, secured, and independently started my first fully independent funding (SIRG on the use of sustainable natural and bio-resources for the formulation of drug products) in 2015.
 - Managed and provided technical guidance for researchers involved in several multidisciplinary projects within the SSPC, University of Limerick including the Momentum project with J&J.
 - Supervision for research students (PhD & MSc); designing and providing guidance for research activities.
 - Based on my entrepreneurial abilities, I established a University Spin-out company specialized in advanced particulate processing know-how and novel academic research related to the commercial R&D industry.
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**Postdoctoral Researcher and Laboratory Manager: Industrial Project –
Process and Product Design | Queen’s University Belfast | 2013– 2014**

- Worked within the School of Pharmacy (QUB) alongside Sabic Manufacturing Company (Saudi Arabia), on their future granulated & coated smart fertilizer for controlled release; smart coating as thin as 3% (with up to 97% nutrient content).
- Gained experience in project management from conception through to application and completion and exceeded all expectations of the company.

Lecturer of Chemical Engineering & Coordinator of The International Foundation Program for Science & Engineering | INTO College, Queen’s University Belfast | 2011– 2013

- Teaching and curriculum development for the International Diploma in Science and Engineering.
- Conducted regular meetings with students and analyzed their feedback in order to maximize their engagement. Achieved a high pass rate and received highly positive feedback.
- Scheduled regular meetings with lecturers to evaluate modules and support teaching and learning for the courses.

PROFESSIONAL SKILLS & RESEARCH INTERESTS

- Particle and powder, processing expertise for various applications, mainly continuous manufacturing techniques, and drug formulation applications. Extensive technical experience with an Engineering prospect of a wide range of pharmaceutical manufacturing processes (optimization and control), analytical and characterization techniques.
- Lecturing, assessment, and curriculum development and course coordination skills: plan, design/develop and deliver a range of activities including embedded research and interactive online teaching.
- Supervision and guidance of junior researchers, PhD and MSc students; effective communications and mentorship of colleagues and students to support their career and personal development.
- Generating innovative ideas and proposal writing, high quality publications, technical report preparation and presentation to secure funds and represent my School and the University.
- In depth knowledge of the national and international funding sources, full engagement with industrial partners and TTOs to secure funding, identify scope for current and future opportunities.
- Effective communications with experience in leading and working within multidisciplinary teams and mentorship of colleagues and students to support their career and personal development.
- Flexibility and ability to perform assessment and teaching in addition to many administrative duties.

RECENT AWARDS

- Winner of the Bernal Research Award at the University of Limerick 2017, 2018 and 2020.
- PMTC Winner of the Partnership Alliance of the Year – Pharma Industry Awards 2018.
- Second place in the Research Centre of the Year Award and Research & Development Achievement Award – Pharma Industry Awards 2018.
- Winner of the Industrial collaboration award at the FEA conference and invited speaker at the FEA conference at the American University of Beirut (AUB) 2017.

HISTORY OF MENTORING AND SUPERVISION

- Direct supervision of 13 MSc students, 9 PhD Students and 5 Postdocs, thus far.
 - Current ongoing PhD Projects (Primary Supervisor):
 - Synthesis of Biocompatible Metal-Organic Frameworks Nanoparticles for Therapeutic Applications – Student: Nour Karakira (2023 – ongoing), American University of Beirut.
 - Green Pharmaceuticals: Efficient and Environmentally Friendly Formulation Processes – Student: Mohammad Hammoud (2022 – ongoing), American University of Beirut.
 - Machine Learning Algorithms for PAT Model in Mechano-chemical Synthesis for pharmaceutical applications – PhD Student: Qatada Damra (2019 – ongoing).
 - Continuous manufacturing of Metal organic frameworks (MOFs): Experimental investigation and process optimization – Student: Ahmed Metawea (2018 – ongoing).
 - Synthesis and Engineering of MOFs for Industrial Advancement – MSc Student: Mariam Mokalled (2023 – Ongoing).

COMPETITIVE FUNDING AWARDS

Project Title	Funding source	Amount	Role
Enhancing European Union Good Manufacturing Practice (EUGMP) Knowledge through Interdisciplinary Studies GAP-101127408	Erasmus+ Program	€28,000	Coordinator 2023 – 2024
Synthesis and Engineering of Metal Organic Frameworks for Industrial Advancement	Vertically Integrated Projects – AUB Funds	\$59,500	Co-Principal Investigator 2023 to 2024
Seaweed Bioactives supplemented animal feeds – 2021R647	DAERA North South Fund	€1,202,289 (€595,355)	Co-Principal Investigator 2022 to 2025
GreenPM – 101050785 –ERASMUS-EDU-2021-EMJM-DESIGN –Mundus Design Measures	Erasmus+ Program	€56,750	Coordinator 2021 to 2022 (6 months)
Natural Materials for Advanced Therapeutics (NEAT): Biomaterial Derived Excipients for Improved Bioavailability – 15/SIRG/3552	Science Foundation Ireland (SFI)	€509,000	Principal Investigator 2016 to 2021
Engineered Inhalable Antiviral- Composites for Pulmonary Delivery with Optimal Therapeutic Outcomes – 20/COV/0238	Science Foundation Ireland	€285,735	Principal Investigator 2021 (6 months)
Development of Drug Substance Plant Cleaning Methodologies – IP 2018 0727	Enterprise Ireland	€186,230	Principal Investigator 2019 to 2020
Powder/Particle Modelling for Process Design – 2019 0864	Enterprise Ireland	€166,130	Principal Investigator 2018 to 2019
The MOMEnTUM Project – Spray Drying of biopharmaceuticals Theme (14/SP/2750)	Science Foundation Ireland	€315,100	Theme Leader Co-Principal Investigator 2018 to 2019
Proof of concept and Design of a bespoke twin screw extruder – SSPC- 2019-UL-013-1	Science Foundation Ireland via SSPC	€25,000	Principal Investigator 2019 to 2020
Analytical Research Contract - Fully funded by Industry	Clarochem Ireland	€19,800	Principal Investigator 2021 (3 months)
Astellas Pharma Research Contract - Fully funded by Industry	Astellas Pharma	€15,900	Principal Investigator 2020 (3 months)
Innovation Voucher – IV 2019 1224	Enterprise Ireland	€12,000	Principal Investigator 2019 to 2020
Partnership in continuous manufacturing for nano-based drug products – NSF/SFI–US-Ireland	US-Ireland R&D Partnership Program	€147,000	Co- Principal Investigator 2015 to 2019

PATENTS & INVENTION DISCLOSURES

- Ahmad B. Albadarin, Zeglinski J., Walker G., (2020) A method of processing active pharmaceutical ingredients and apparatus for use in such methods, P34678GB1.
- Walker, G., Mangwandi C., Ahmad B. Albadarin, Allen S. (2011) Controlled release fertilizer. UK Patent number P1113313.9.
- Four invention disclosures – Supercritical Processing of Dried Powders, 2021-UL-034-I.
- Invention disclosures – Continuous Drying of Nanoparticles Using a twin Screw Technology, 2021-UL-013-1.

LIST OF PUBLICATIONS

1. Ahmad B. Albadarin, A. H. Al-Muhtaseb, N. A. Al-laqtah, G. M. Walker, S. J. Allen, and M. N. M. Ahmad. 2011. 'Biosorption of toxic chromium from aqueous phase by lignin: Mechanism, effect of other metal ions and salts', *Chemical Engineering Journal*, 169: 20-30.
2. Ahmad B. Albadarin, Ahmed Metawea, Mohammad Hammoud, Mohammad N. Ahmad, Gavin Walker. 2024. Study of process parameters that enable direct spray drying synthesis of UiO-66-NH₂. *Microporous and Mesoporous Materials*, 372, 113114.
3. Ahmed Metawea, Rodrigo Soto, Majeda Khraisheh, Gavin Walker, Ahmad B. Albadarin. 2024. Application of Raman and chemometrics to the mechanochemical synthesis of 4,4-bipyridine/cobalt based MOF using twin screw extrusion. *Powder Technology*, 437, 119558.
4. Saeed Shirazian, Thoa Huynh c d, Niloofar Pirestani, Roozbeh Soltani, Azam Marjani, Shaheen M, Ahmad B. Albadarin. 2024. Sarkar Efficient green Cr(VI) adsorbent from sorghum waste: Eco-designed functionalized mesoporous silica FDU-12. 2024. 664, 15 667-680.
5. Ahmad B. Albadarin, A. H. Al-Muhtaseb, G. M. Walker, S. J. Allen, and M. N. M. Ahmad. 2011. 'Retention of toxic chromium from aqueous phase by H₃PO₄-activated lignin: Effect of salts and desorption studies', *Desalination*, 274: 64-73.
6. Ahmad B. Albadarin, M. Charara, B. J. Abu Tarboush, M. N. M. Ahmad, T. A. Kurniawan, M. Naushad, G. M. Walker, and C. Mangwandi. 2017. 'Mechanism analysis of tartrazine biosorption onto masau stones; a low-cost by-product from semi-arid regions', *Journal of Molecular Liquids*, 242: 478-83.
7. Ahmad B. Albadarin, M. N. Collins, M. Naushad, S. Shirazian, G. Walker, and C. Mangwandi. 2017. 'Activated lignin-chitosan extruded blends for efficient adsorption of methylene blue', *Chemical Engineering Journal*, 307: 264-72.
8. Ahmad B. Albadarin, Y. Glocheux, M. N. M. Ahmad, G. M. Walker, and C. Mangwandi. 2014. 'Novel comparison of kinetic models for the adsorption-coupled reduction of Cr(VI) using untreated date pit biomaterial', *Ecological Engineering*, 70: 200-05.
9. Ahmad B. Albadarin, Y. Glocheux, C. Mangwandi, and G. Walker. 2014. "Kinetic models for the adsorption-coupled reduction of Cr(VI) using untreated date pits." In 21st International Congress of Chemical and Process Engineering, CHISA 2014 and 17th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, PRES 2014, 1240.
10. Ahmad B. Albadarin, T. D. Lewis, and G. M. Walker. 2017. 'Granulated polyhalite fertilizer caking propensity', *Powder Technology*, 308: 193-99.
11. Ahmad B. Albadarin, and C. Mangwandi. 2015. 'Mechanisms of Alizarin Red S and Methylene blue biosorption onto olive stone by-product: Isotherm study in single and binary systems', *Journal of Environmental Management*, 164: 86-93.
12. Ahmad B. Albadarin, C. Mangwandi, A. H. Al-Muhtaseb, G. M. Walker, S. J. Allen, and M. N. M. Ahmad. 2012a. 'Kinetic and thermodynamics of chromium ions adsorption onto low-cost dolomite adsorbent', *Chemical Engineering Journal*, 179: 193-202.
13. Ahmad B. Albadarin, C. Mangwandi, A. H. Al-Muhtaseb, G. M. Walker, S. J. Allen, and M. N. M. Ahmad. 2012b. 'Modelling and fixed bed column adsorption of Cr(VI) onto orthophosphoric acid-activated lignin', *Chinese Journal of Chemical Engineering*, 20: 469-77.
14. Ahmad B. Albadarin, C. Mangwandi, G. M. Walker, S. J. Allen, and M. N. Ahmad. 2011. 'Biosorption characteristics of sawdust for the removal of Cd(II) Ions: Mechanism and thermodynamic studies', *Chemical Engineering Transactions*, 24: 1297-302.
15. Ahmad B. Albadarin, C. Mangwandi, G. M. Walker, S. J. Allen, M. N. M. Ahmad, and M. Khraisheh. 2013. 'Influence of solution chemistry on Cr(VI) reduction and complexation onto date-pits/tea-waste biomaterials', *Journal of Environmental Management*, 114: 190-201.
16. Ahmad B. Albadarin, J. Mo, Y. Glocheux, S. Allen, G. Walker, and C. Mangwandi. 2014. 'Preliminary investigation of mixed adsorbents for the removal of copper and methylene blue from aqueous solutions', *Chemical Engineering Journal*, 255: 525-34.
17. Ahmad B. Albadarin, C. B. Potter, M. T. Davis, J. Iqbal, S. Korde, S. Pagire, A. Paradkar, and G. Walker. 2017. 'Development of stability-enhanced ternary solid dispersions via combinations of HPMCP and Soluplus® processed by hot melt extrusion', *International Journal of Pharmaceutics*, 532: 603-11.

18. Ahmad B. Albadarin, S. Solomon, M. A. Daher, and G. Walker. 2018. 'Efficient removal of anionic and cationic dyes from aqueous systems using spent Yerba Mate "Ilex paraguariensis"', *Journal of the Taiwan Institute of Chemical Engineers*, 82: 144-55.
19. Ahmad B. Albadarin, S. Solomon, T. A. Kurniawan, C. Mangwandi, and G. Walker. 2017. 'Single, simultaneous and consecutive biosorption of Cr(VI) and Orange II onto chemically modified masau stones', *Journal of Environmental Management*, 204: 365-74.
20. Ahmad B. Albadarin, G. M. Walker, S. J. Allen, and M. N. Ahmad. 2012. "Modelling and fixed bed column adsorption of Cr(VI) onto orthophosphoric acid-activated lignin." In CHISA 2012 - 20th International Congress of Chemical and Process Engineering and PRES 2012 - 15th Conference PRES.
21. Ahmad B. Albadarin, Z. Yang, C. Mangwandi, Y. Glocheux, G. Walker, and M. N. M. Ahmad. 2014. 'Experimental design and batch experiments for optimization of Cr(VI) removal from aqueous solutions by hydrous cerium oxide nanoparticles', *Chemical Engineering Research and Design*, 92: 1354-62.
22. Ahmad B. Albadarin, D. Egan, M. Davis, C. John, and G. Walker. 2014. "Investigation of the applicability and properties of date stone extracts as pharmaceutical excipients." In *Pharmaceutical Discovery, Development and Manufacturing Forum 2014 - Core Programming Area at the 2014 AIChE Annual Meeting*, 220-21.
23. Abu-Hamdeh, N. H., R. A. R. Bantan, Ahmad B. Albadarin, and Z. Li. 2021. 'Convection of water based nanofluid flow including non-Darcy law', *Journal of Molecular Liquids*, 337.
24. Al-Lagtah, N., A. A. Saud, A. Albadarin, Y. Salameh, G. Walker, S. Allen, and M. Ahmad. 2011. "The removal of heavy metals from aqueous solutions by commercial activated carbon." In *World Environmental and Water Resources Congress 2011: Bearing Knowledge for Sustainability - Proceedings of the 2011 World Environmental and Water Resources Congress*, 3402-11.
25. Al-Muhtaseb, A. H., K. A. Ibrahim, Ahmad B. Albadarin, O. Ali-khashman, G. M. Walker, and M. N. M. Ahmad. 2011. 'Remediation of phenol-contaminated water by adsorption using poly(methyl methacrylate) (PMMA)', *Chemical Engineering Journal*, 168: 691-99.
26. Al Lagtah, N. M. A., M. N. M. Ahmad, and Ahmad B. Albadarin. 2017. 'The extent of change in the physicochemical characteristics and pollutants sequestration of date palm stones after microemulsion modification', *Desalination and Water Treatment*, 71: 244-60.
27. Al Lagtah, N. M. A., S. A. Onaizi, Ahmad B. Albadarin, F. A. Ghaith, and M. I. Nour. 2019. 'Techno-economic analysis of the effects of heat integration and different carbon capture technologies on the performance of coal-based IGCC power plants', *Journal of Environmental Chemical Engineering*, 7.
28. Arifin, S. N. H., R. M. S. Radin Mohamed, A. A. Al-Gheethi, L. C. Wei, G. Yashni, N. Fitriani, M. Naushad, and Ahmad B. Albadarin. 2022. 'Modified TiO₂ nanotubes-zeolite composite photocatalyst: Characteristics, microstructure and applicability for degrading triclocarban', *Chemosphere*, 287.
29. Baghdadi, Y. N., R. K. Shah, Ahmad B. Albadarin, and C. Mangwandi. 2018. 'Growth kinetics of nuclei formed from different binders and powders in vertical cylindrical mixing devices', *Chemical Engineering Research and Design*, 132: 1070-81.
30. Cao, Y., A. Khan, H. Balakheyli, A. N. K. Lup, M. Ramezani Taghartapeh, H. Mirzaei, S. Reza Khandoozi, A. Soltani, M. Aghaei, F. Heidari, S. M. Sarkar, and Ahmad B. Albadarin. 2021. 'Penicillamine functionalized B12N12 and B12CaN12 nanocages act as potential inhibitors of proinflammatory cytokines: A combined DFT analysis, ADMET and molecular docking study', *Arabian Journal of Chemistry*, 14.
31. Cao, Y., A. Khan, M. Javan, M. T. Baei, E. Tazikeh-Lemeski, Z. Azmoodeh, A. Soltani, F. Heidari, M. Pishnamazi, and Ahmad B. Albadarin. 2021. 'Adsorption behavior of uracil on external surface of MgO nanotubes: A new class of hybrid nano-bio materials', *Journal of Molecular Liquids*, 339.
32. Cao, Y., A. Khan, T. A. Kurniawan, and Ahmad B. Albadarin. 2021. 'Neural modeling and simulation of molecular separation using amino acid salt solutions', *Journal of Molecular Liquids*, 337.
33. Cao, Y., A. Khan, T. A. Kurniawan, R. Soltani, and Ahmad B. Albadarin. 2021. 'Synthesis of hierarchical micro-mesoporous LDH/MOF nanocomposite with in-situ growth of UiO-66-(NH₂)₂ MOF on the functionalized NiCo-LDH ultrathin sheets and its application for thallium (I) removal', *Journal of Molecular Liquids*, 336.
34. Cao, Y., A. Khan, H. Mirzaei, S. Reza Khandoozi, M. Javan, A. Ng Kay Lup, A. Norouzi, E. Tazikeh Lemeski, M. Pishnamazi, A. Soltani, and Ahmad B. Albadarin. 2021. 'Investigations of adsorption behavior and anti-cancer activity of curcumin on pure and platinum-functionalized B12N12 nanocages', *Journal of Molecular Liquids*, 334.

35. Cao, Y., A. Khan, A. T. Nakhjiri, Ahmad B. Albadarin, T. A. Kurniawan, and M. Rezakazemi. 2021. 'Recent advancements in molecular separation of gases using microporous membrane systems: A comprehensive review on the applied liquid absorbents', *Journal of Molecular Liquids*, 337.
36. Cao, Y., A. Khan, S. Sarkar, and Ahmad B. Albadarin. 2021. 'Extraction of penicillin G from aqueous solution using a membrane contactor: Numerical investigation', *Arabian Journal of Chemistry*, 14.
37. Cao, Y., A. Khan, A. Soltani, V. Erfani-Moghadam, A. N. K. Lup, M. Aghaei, N. Abdolahi, M. Khalili, M. Cordani, H. Balakheyli, S. Tavassoli, and Ahmad B. Albadarin. 2021. 'Spectroscopic, density functional theory, cytotoxicity and antioxidant activities of sulfasalazine and naproxen drugs combination', *Arabian Journal of Chemistry*, 14.
38. Cao, Y., A. Khan, E. Tazikeh-Lemeski, M. Javan, M. T. Baei, M. Ramezani Taghartapeh, H. Mighani, A. Soltani, M. Pishnamazi, A. Nouri, and Ahmad B. Albadarin. 2021. 'Modeling and simulation of external electric field application for diisopropyl methylphosphonate sensing through B12N12 fullerene', *Journal of Molecular Liquids*, 340.
39. Cao, Y., A. Khan, S. Zabihi, and Ahmad B. Albadarin. 2021. 'Neural simulation and experimental investigation of Chloroquine solubility in supercritical solvent', *Journal of Molecular Liquids*, 333.
40. Cao, Y., S. M. Seyed Alizadeh, M. T. Fouladvand, A. Khan, A. Taghvaie Nakhjiri, Z. Heidari, R. Pelalak, T. A. Kurniawan, and Ahmad B. Albadarin. 2021. 'Mathematical modeling and numerical simulation of CO₂ capture using MDEA-based nanofluids in nanostructure membranes', *Process Safety and Environmental Protection*, 148: 1377-85.
41. Crawford, D. E., C. K. G. Miskimmin, Ahmad B. Albadarin, G. Walker, and S. L. James. 2017. 'Organic synthesis by Twin Screw Extrusion (TSE): Continuous, scalable and solvent-free', *Green Chemistry*, 19: 1507-18.
42. Davis, M. T., D. P. Egan, M. Kuhs, Ahmad B. Albadarin, C. S. Griffin, J. A. Collins, and G. M. Walker. 2016. 'Amorphous solid dispersions of BCS class II drugs: A rational approach to solvent and polymer selection', *Chemical Engineering Research and Design*, 110: 192-99.
43. Davis, M. T., C. B. Potter, M. Mohammadpour, Ahmad B. Albadarin, and G. M. Walker. 2017. 'Design of spray dried ternary solid dispersions comprising itraconazole, soluplus and HPMCP: Effect of constituent compositions', *International Journal of Pharmaceutics*, 519: 365-72.
44. Dehghani, M. H., M. Mostofi, M. Alimohammadi, G. McKay, K. Yetilmezsoy, Ahmad B. Albadarin, B. Heibati, M. AlGhouti, N. M. Mubarak, and J. N. Sahu. 2016. 'High-performance removal of toxic phenol by single-walled and multi-walled carbon nanotubes: Kinetics, adsorption, mechanism and optimization studies', *Journal of Industrial and Engineering Chemistry*, 35: 63-74.
45. Douglas, P., Ahmad B. Albadarin, A. H. Al-Muhtaseb, C. Mangwandi, and G. M. Walker. 2015. 'Thermo-mechanical properties of poly ϵ -caprolactone/poly L-lactic acid blends: Addition of nalidixic acid and polyethylene glycol additives', *Journal of the Mechanical Behavior of Biomedical Materials*, 45: 154-65.
46. Douglas, P., Ahmad B. Albadarin, M. Sajjia, C. Mangwandi, M. Kuhs, M. N. Collins, and G. M. Walker. 2016. 'Effect of polyethylene glycol on the mechanical and thermal properties of bioactive poly(ϵ -caprolactone) melt extrudates for pharmaceutical applications', *International Journal of Pharmaceutics*, 500: 179-86.
47. Douglas, P., M. Kuhs, M. Sajjia, M. Khraisheh, G. Walker, M. N. Collins, and Ahmad B. Albadarin. 2016. 'Bioactive PCL matrices with a range of structural & rheological properties', *Reactive and Functional Polymers*, 101: 54-62.
48. Elveny, M., A. Khan, A. T. Nakhjiri, and Ahmad B. Albadarin. 2021. 'A state-of-the-art review on the application of various pharmaceutical nanoparticles as a promising technology in cancer treatment', *Arabian Journal of Chemistry*, 14.
49. Glocheux, Y., Ahmad B. Albadarin, J. Galán, E. Oyedoh, C. Mangwandi, C. Gérente, S. J. Allen, and G. M. Walker. 2014. 'Adsorption study using optimised 3D organised mesoporous silica coated with Fe and Al oxides for specific As(III) and As(V) removal from contaminated synthetic groundwater', *Microporous and Mesoporous Materials*, 198: 101-14.
50. Glocheux, Y., Ahmad B. Albadarin, C. Mangwandi, E. Stewart, and G. M. Walker. 2015. 'Production of porous aluminium and iron sulphated oxyhydroxides using industrial grade coagulants for optimised arsenic removal from groundwater', *Journal of Industrial and Engineering Chemistry*, 25: 56-66.
51. Glocheux, Y., M. M. Pasarín, Ahmad B. Albadarin, S. J. Allen, and G. M. Walker. 2013. 'Removal of arsenic from groundwater by adsorption onto an acidified laterite by-product', *Chemical Engineering Journal*, 228: 565-74.

52. Glocheux, Y., M. M. Pasarín, Ahmad B. Albadarin, C. Mangwandi, F. Chazarenc, and G. M. Walker. 2014. 'Phosphorus adsorption onto an industrial acidified laterite by-product: Equilibrium and thermodynamic investigation', *Asia-Pacific Journal of Chemical Engineering*, 9: 929-40.
53. Heibati, B., M. Ghoochani, Ahmad B. Albadarin, A. Mesdaghinia, A. S. H. Makhoulouf, M. Asif, A. Maity, I. Tyagi, S. Agarwal, and V. K. Gupta. 2016. 'Removal of linear alkyl benzene sulfonate from aqueous solutions by functionalized multi-walled carbon nanotubes', *Journal of Molecular Liquids*, 213: 339-44.
54. Heibati, B., S. Rodriguez-Couto, O. Ozgonenel, N. G. Turan, A. Aluigi, M. A. Zazouli, M. G. Ghosikali, M. Mohammadyan, and Ahmad B. Albadarin. 2016. 'A modeling study by artificial neural network on ethidium bromide adsorption optimization using natural pumice and iron-coated pumice', *Desalination and Water Treatment*, 57: 13472-83.
55. Heibati, B., S. Rodriguez-Couto, N. G. Turan, O. Ozgonenel, Ahmad B. Albadarin, M. Asif, I. Tyagi, S. Agarwal, and V. K. Gupta. 2015. 'Removal of noxious dye-Acid Orange 7 from aqueous solution using natural pumice and Fe-coated pumice stone', *Journal of Industrial and Engineering Chemistry*, 31: 124-31.
56. Iakovleva, E., M. Sillanpää, C. Mangwandi, Ahmad B. Albadarin, P. Maydannik, S. Khan, V. Srivastava, K. Kamwilaisak, and S. Wang. 2018. 'Application of Al₂O₃ modified sulfate tailings (CaFe-Cake and SuFe) for efficient removal of cyanide ions from mine process water', *Minerals Engineering*, 118: 24-32.
57. Iakovleva, E., M. Sillanpää, P. Maydannik, J. T. Liu, S. Allen, Ahmad B. Albadarin, and C. Mangwandi. 2017. 'Manufacturing of novel low-cost adsorbent: Co-granulation of limestone and coffee waste', *Journal of Environmental Management*, 203: 853-60.
58. Ismail, H. Y., Ahmad B. Albadarin, J. Iqbal, and G. M. Walker. 2021. 'Image processing for detecting complete two-dimensional properties' distribution of granules produced in twin screw granulation', *International Journal of Pharmaceutics*, 600.
59. Ismail, H. Y., S. Fayyad, M. N. Ahmad, J. J. Leahy, M. Naushad, G. M. Walker, Ahmad B. Albadarin, and W. Kwapinski. 2021. 'Modelling of yields in torrefaction of olive stones using artificial intelligence coupled with kriging interpolation', *Journal of Cleaner Production*, 326.
60. Ismail, H. Y., S. Shirazian, M. Singh, D. Whitaker, Ahmad B. Albadarin, and G. M. Walker. 2020. 'Compartmental approach for modelling twin-screw granulation using population balances', *International Journal of Pharmaceutics*, 576.
61. Ismail, H. Y., M. Singh, Ahmad B. Albadarin, and G. M. Walker. 2020. 'Complete two-dimensional population balance modelling of wet granulation in twin screw', *International Journal of Pharmaceutics*, 591.
62. Ismail, H. Y., M. Singh, S. Darwish, M. Kuhs, S. Shirazian, D. M. Croker, M. Khraisheh, Ahmad B. Albadarin, and G. M. Walker. 2019. 'Developing ANN-Kriging hybrid model based on process parameters for prediction of mean residence time distribution in twin-screw wet granulation', *Powder Technology*, 343: 568-77.
63. Ismail, H. Y., M. Singh, S. Shirazian, Ahmad B. Albadarin, and G. M. Walker. 2020. 'Development of high-performance hybrid ANN-finite volume scheme (ANN-FVS) for simulation of pharmaceutical continuous granulation', *Chemical Engineering Research and Design*, 163: 320-26.
64. Jaiyeola, O. O., H. Chen, Ahmad B. Albadarin, and C. Mangwandi. 2020. 'Production of bio-waste granules and their evaluation as adsorbent for removal of hexavalent chromium and methylene blue dye', *Chemical Engineering Research and Design*, 164: 59-67.
65. Jeyaseelan, A., N. Viswanathan, M. Naushad, and Ahmad B. Albadarin. 2022. 'Eco-friendly design of functionalized graphene oxide incorporated alginate beads for selective fluoride retention', *Diamond and Related Materials*, 121.
66. Karimi-Jafari, M., R. Soto, Ahmad B. Albadarin, D. Croker, and G. Walker. 2021. 'In-line Raman spectroscopy and chemometrics for monitoring cocrystallisation using hot melt extrusion', *International Journal of Pharmaceutics*, 601.
67. Kavanagh, O. N., Ahmad B. Albadarin, D. M. Croker, A. M. Healy, and G. M. Walker. 2018. 'Maximising success in multidrug formulation development: A review', *Journal of Controlled Release*, 283: 1-19.
68. Kelly, C. B., Ahmad B. Albadarin, and G. M. Walker. 2016a. "466729 investigation of phase separation phenomena in a supersaturated ternary amorphous solid dispersion." In *Particle Technology Forum 2016 - Core Programming Area at the 2016 AIChE Annual Meeting*, 423-25.
69. Kelly, C. B., Ahmad B. Albadarin, and G. M. Walker. 2016b. "Investigation of phase separation phenomena in a supersaturated ternary amorphous solid dispersion." In *Separations Division 2016 - Core Programming Area at the 2016 AIChE Annual Meeting*, 663-65.
70. Kenawy, E. R., A. A. Ghfar, M. Naushad, Z. A. Alothman, M. A. Habila, and Ahmad B. Albadarin. 2017. 'Efficient removal of Co(II) metal ion from aqueous solution using cost-effective oxidized activated carbon: Kinetic and isotherm studies', *Desalination and Water Treatment*, 70: 220-26.

71. Khraisheh, M., L. Wu, A. H. Al-Muhtaseb, Ahmad B. Albadarin, and G. M. Walker. 2012. 'Phenol degradation by powdered metal ion modified titanium dioxide photocatalysts', *Chemical Engineering Journal*, 213: 125-34.
72. Kurniawan, T. A., R. Avtar, D. Singh, W. Xue, M. H. Dzarfan Othman, G. H. Hwang, I. Iswanto, Ahmad B. Albadarin, and A. O. Kern. 2021. 'Reforming MSWM in Sukunan (Yogyakarta, Indonesia): A case-study of applying a zero-waste approach based on circular economy paradigm', *Journal of Cleaner Production*, 284.
73. Kurniawan, T. A., W. Lo, D. Singh, M. H. D. Othman, R. Avtar, G. H. Hwang, Ahmad B. Albadarin, A. O. Kern, and S. Shirazian. 2021. 'A societal transition of MSW management in Xiamen (China) toward a circular economy through integrated waste recycling and technological digitization', *Environmental Pollution*, 277.
74. Kurniawan, T. A., D. Singh, R. Avtar, M. H. D. Othman, G. H. Hwang, Ahmad B. Albadarin, M. Rezakazemi, T. Setiadi, and S. Shirazian. 2021. 'Resource recovery from landfill leachate: An experimental investigation and perspectives', *Chemosphere*, 274.
75. Kurniawan, T. A., D. Singh, W. Xue, R. Avtar, M. H. D. Othman, G. H. Hwang, T. Setiadi, Ahmad B. Albadarin, and S. Shirazian. 2021. 'Resource recovery toward sustainability through nutrient removal from landfill leachate', *Journal of Environmental Management*, 287.
76. Kurniawan, T. A., L. Yanyan, T. Ouyang, Ahmad B. Albadarin, and G. Walker. 2018. 'BaTiO₃/TiO₂ composite-assisted photocatalytic degradation for removal of acetaminophen from synthetic wastewater under UV-vis irradiation', *Materials Science in Semiconductor Processing*, 73: 42-50.
77. Li, M., A. Khan, M. D. Mahlouji, M. H. Zare, and Ahmad B. Albadarin. 2021. 'Catalytic conversion modeling of methanol in dehydration reactor using Voronoi 3D pore network model', *Arabian Journal of Chemistry*, 14.
78. Li, Z., T. K. Ibrahim, M. M. Selim, A. Issakhov, and Ahmad B. Albadarin. 2021. 'Simulation of sinusoidal enclosure filled with nanoparticles enhanced PCM', *Journal of Molecular Liquids*, 337.
79. Liu, J., H. Chen, Ahmad B. Albadarin, and C. Mangwandi. 2021. 'Granulation of teawaste and limestone using sodium-based lignosulfonate and DEM simulation of powder mixing', *Powder Technology*, 380: 321-33.
80. Madden, D. G., Ahmad B. Albadarin, D. O'Nolan, P. Cronin, J. J. Perry, S. Solomon, T. Curtin, M. Khraisheh, M. J. Zaworotko, and G. M. Walker. 2020. 'Metal-Organic Material Polymer Coatings for Enhanced Gas Sorption Performance and Hydrolytic Stability under Humid Conditions', *ACS Applied Materials and Interfaces*, 12: 33759-64.
81. Mangwandi, C., A. Albadarin, S. J. Allen, and G. M. Walker. 2011. 'Nutrient recovery from waste water: Optimization of an adsorption process', *Chemical Engineering Transactions*, 24: 1177-82.
82. Mangwandi, C., Ahmad B. Albadarin, A. H. Al-Muhtaseb, S. J. Allen, and G. M. Walker. 2013. 'Optimisation of high shear granulation of multicomponent fertiliser using response surface methodology', *Powder Technology*, 238: 142-50.
83. Mangwandi, C., Ahmad B. Albadarin, Y. Glocheux, and G. M. Walker. 2014. 'Removal of ortho-phosphate from aqueous solution by adsorption onto dolomite', *Journal of Environmental Chemical Engineering*, 2: 1123-30.
84. Mangwandi, C., Ahmad B. Albadarin, L. JiangTao, S. Allen, and G. M. Walker. 2014. 'Development of a value-added soil conditioner from high shear co-granulation of organic waste and limestone powder', *Powder Technology*, 252: 33-41.
85. Mangwandi, C., L. JiangTao, Ahmad B. Albadarin, S. J. Allen, and G. M. Walker. 2013a. 'Alternative method for producing organic fertiliser from anaerobic digestion liquor and limestone powder: High Shear wet granulation', *Powder Technology*, 233: 245-54.
86. Mangwandi, C., L. JiangTao, Ahmad B. Albadarin, S. J. Allen, and G. M. Walker. 2013b. 'The variability in nutrient composition of Anaerobic Digestate granules produced from high shear granulation', *Waste Management*, 33: 33-42.
87. Mangwandi, C., L. JiangTao, Ahmad B. Albadarin, R. M. Dhenge, and G. M. Walker. 2015. 'High shear granulation of binary mixtures: Effect of powder composition on granule properties', *Powder Technology*, 270: 424-34.
88. Mangwandi, C., T. A. Kurniawan, and Ahmad B. Albadarin. 2020. 'Comparative biosorption of chromium (VI) using chemically modified date pits (CM-DP) and olive stone (CM-OS): Kinetics, isotherms and influence of co-existing ions', *Chemical Engineering Research and Design*, 156: 251-62.
89. Mangwandi, C., S. N. A. Suhaimi, J. T. Liu, R. M. Dhenge, and Ahmad B. Albadarin. 2016. 'Design, production and characterisation of granular adsorbent material for arsenic removal from contaminated wastewater', *Chemical Engineering Research and Design*, 110: 70-81.

90. Mangwandi, C., N. A. Zainal, L. JiangTao, Y. Glocheux, and Ahmad B. Albadarin. 2015. 'Investigation of influence of process variables on mechanical strength, size and homogeneity of pharmaceutical granules produced by fluidised hot melt granulation', *Powder Technology*, 272: 173-80.
91. Mirza, Z., J. Liu, Y. Glocheux, Ahmad B. Albadarin, G. M. Walker, and C. Mangwandi. 2015. 'Effect of impeller design on homogeneity, size and strength of pharmaceutical granules produced by high-shear wet granulation', *Particuology*, 23: 31-39.
92. Murray, K. A., N. Döbelin, Ahmad B. Albadarin, J. Sadło, G. Ren, M. N. Collins, and C. O'Neill. 2019. 'The influence of sterilization on octacalcium phosphate for clinical applications.' in, *Octacalcium Phosphate Biomaterials: Understanding of Bioactive Properties and Application*.
93. Naushad, M., T. Ahamad, G. Sharma, A. H. Al-Muhtaseb, Ahmad B. Albadarin, M. M. Alam, Z. A. Alothman, S. M. Alshehri, and A. A. Ghfar. 2016. 'Synthesis and characterization of a new starch/SnO₂ nanocomposite for efficient adsorption of toxic Hg²⁺ metal ion', *Chemical Engineering Journal*, 300: 306-16.
94. Nong, H., A. M. Fatah, S. A. Shehzad, T. Ambreen, M. M. Selim, and Ahmad B. Albadarin. 2021. 'Numerical modeling for steady-state nanofluid free convection involving radiation through a wavy cavity with Lorentz forces', *Journal of Molecular Liquids*, 336.
95. O'Connor, E., O. N. Kavanagh, D. Chovan, D. G. Madden, P. Cronin, Ahmad B. Albadarin, G. M. Walker, and A. Ryan. 2020. 'Highly selective trace ammonium removal from dairy wastewater streams by aluminosilicate materials', *Journal of Industrial and Engineering Chemistry*, 86: 39-46.
96. Orozco, A. M., A. H. Al-Muhtaseb, Ahmad B. Albadarin, D. Rooney, G. M. Walker, and M. N. M. Ahmad. 2011a. 'Acid-catalyzed hydrolysis of cellulose and cellulosic waste using a microwave reactor system', *RSC Advances*, 1: 839-46.
97. Orozco, A. M., A. H. Al-Muhtaseb, Ahmad B. Albadarin, D. Rooney, G. M. Walker, and M. N. M. Ahmad. 2011b. 'Dilute phosphoric acid-catalysed hydrolysis of municipal bio-waste wood shavings using autoclave parr reactor system', *Bioresource Technology*, 102: 9076-82.
98. Oyedoh, E. A., Ahmad B. Albadarin, G. M. Walker, M. Mirzaeian, and M. N. M. Ahmad. 2013. 'Preparation of controlled porosity resorcinol formaldehyde xerogels for adsorption applications', *Chemical Engineering Transactions*, 32: 1651-56.
99. Pelalak, R., Z. Heidari, R. Alizadeh, E. Ghareshabani, N. Nasseh, A. Marjani, Ahmad B. Albadarin, and S. Shirazian. 2021. 'Efficient oxidation/mineralization of pharmaceutical pollutants using a novel Iron (III) oxyhydroxide nanostructure prepared via plasma technology: Experimental, modeling and DFT studies', *Journal of Hazardous Materials*, 411.
100. Pishnamazi, M., A. Khan, T. A. Kurniawan, H. Sanaeepur, Ahmad B. Albadarin, and R. Soltani. 2021. 'Adsorption of dyes on multifunctionalized nano-silica KCC-1', *Journal of Molecular Liquids*, 338.
101. Potter, C. B., M. T. Davis, Ahmad B. Albadarin, and G. M. Walker. 2018. 'Investigation of the Dependence of the Flory-Huggins Interaction Parameter on Temperature and Composition in a Drug-Polymer System', *Molecular Pharmaceutics*, 15: 5327-35.
102. Razavi, S. M. R., M. Rezakazemi, Ahmad B. Albadarin, and S. Shirazian. 2016. 'Simulation of CO₂ absorption by solution of ammonium ionic liquid in hollow-fiber contactors', *Chemical Engineering and Processing: Process Intensification*, 108: 27-34.
103. Rezakazemi, M., Ahmad B. Albadarin, G. M. Walker, and S. Shirazian. 2018. 'Quantum chemical calculations and molecular modeling for methylene blue removal from water by a lignin-chitosan blend', *International Journal of Biological Macromolecules*, 120: 2065-75.
104. Rezakazemi, M., T. A. Kurniawan, Ahmad B. Albadarin, and S. Shirazian. 2018. 'Molecular modeling investigation on mechanism of phenol removal from aqueous media by single- and multi-walled carbon nanotubes', *Journal of Molecular Liquids*, 271: 24-30.
105. Romeih, E., Ahmad B. Albadarin, A. Olaleye, and G. Walker. 2021. 'Enzymatically cross-linked skim milk powder: Enhanced rheological and functional properties', *International Dairy Journal*, 113.
106. Sajjia, M., Ahmad B. Albadarin, and G. Walker. 2016. 'Statistical analysis of industrial-scale roller compactor 'Freund TF-MINI model'', *International Journal of Pharmaceutics*, 513: 453-63.
107. Sajjia, M., S. Shirazian, D. Egan, J. Iqbal, Ahmad B. Albadarin, M. Southern, and G. Walker. 2017. 'Mechanistic modelling of industrial-scale roller compactor 'Freund TF-MINI model'', *Computers and Chemical Engineering*, 104: 141-50.
108. Sajjia, M., S. Shirazian, C. B. Kelly, Ahmad B. Albadarin, and G. Walker. 2017. 'ANN Analysis of a Roller Compaction Process in the Pharmaceutical Industry', *Chemical Engineering and Technology*, 40: 487-92.

109. Salameh, Y., M. Ahmad, S. Allen, G. Walker, A. Albadarin, and N. Al-Lagtah. 2010. 'Kinetic and thermodynamic investigations on arsenic adsorption onto dolomitic sorbents', *Chemical Engineering Transactions*, 21: 793-98.
110. Salameh, Y., Ahmad B. Albadarin, S. Allen, G. Walker, and M. N. M. Ahmad. 2015. 'Arsenic(III,V) adsorption onto charred dolomite: Charring optimization and batch studies', *Chemical Engineering Journal*, 259: 663-71.
111. Sang, Y. C., Ahmad B. Albadarin, A. H. Al-Muhtaseb, C. Mangwandi, J. N. McCracken, S. E. J. Bell, and G. M. Walker. 2015. 'Properties of super-hydrophobic copper and stainless steel meshes: Applications in controllable water permeation and organic solvents/water separation', *Applied Surface Science*, 335: 107-14.
112. Shirazian, S., J. Zeglinski, S. Darwish, M. Kuhs, Ahmad B. Albadarin, D. M. Croker, and G. M. Walker. 2018. 'Continuous twin screw wet granulation: The combined effect of process parameters on residence time, particle size, and granule morphology', *Journal of Drug Delivery Science and Technology*, 48: 319-27.
113. Singh, M., H. Y. Ismail, T. Matsoukas, Ahmad B. Albadarin, and G. Walker. 2019. 'Mass-based finite volume scheme for aggregation, growth and nucleation population balance equation', *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 475.
114. Singh, M., H. Y. Ismail, R. Singh, Ahmad B. Albadarin, and G. Walker. 2019. 'Finite volume approximation of nonlinear agglomeration population balance equation on triangular grid', *Journal of Aerosol Science*, 137.
115. Singh, M., T. Matsoukas, Ahmad B. Albadarin, and G. Walker. 2019. 'New volume consistent approximation for binary breakage Population Balance Equation and its convergence analysis', *ESAIM: Mathematical Modelling and Numerical Analysis*, 53: 1695-713.
116. Solomon, S., J. Iqbal, and Ahmad B. Albadarin. 2021. 'Insights into the ameliorating ability of mesoporous silica in modulating drug release in ternary amorphous solid dispersion prepared by hot melt extrusion', *European Journal of Pharmaceutics and Biopharmaceutics*, 165: 244-58.
117. Solomon, S., A. Ziaee, L. Giraudeau, E. O'Reilly, G. Walker, and Ahmad B. Albadarin. 2019. 'Particle engineering of excipients: A mechanistic investigation into the compaction properties of lignin and [co]-spray dried lignin', *International Journal of Pharmaceutics*, 563: 237-48.
118. Soltani, R., M. Nazari, A. Marjani, M. Faisal, N. Pirestani, Ahmad B. Albadarin, S. Soltani, C. H. Su, C. H. Chang, M. Pishnamazi, M. J. Ansari, and S. Shirazian. 2022. 'Bio-based 3D dendritic silica nanosphere: A green superior adsorbent', *Journal of Cleaner Production*, 335.
119. Soltani, R., R. Pelalak, M. Pishnamazi, A. Marjani, Ahmad B. Albadarin, S. M. Sarkar, and S. Shirazian. 2021a. 'A novel and facile green synthesis method to prepare LDH/MOF nanocomposite for removal of Cd(II) and Pb(II)', *Scientific Reports*, 11.
120. Soltani, R., R. Pelalak, M. Pishnamazi, A. Marjani, Ahmad B. Albadarin, S. M. Sarkar, and S. Shirazian. 2021b. 'Synthesis of multi-organo-functionalized fibrous silica KCC-1 for highly efficient adsorption of acid fuchsine and acid orange II from aqueous solution', *Scientific Reports*, 11.
121. Soltani, R., R. Pelalak, M. Pishnamazi, A. Marjani, S. M. Sarkar, Ahmad B. Albadarin, and S. Shirazian. 2021. 'Novel bimodal micro-mesoporous Ni₅₀Co₅₀-LDH/UiO-66-NH₂ nanocomposite for Tl(I) adsorption', *Arabian Journal of Chemistry*, 14.
122. Song, Y., A. Almarashi, M. M. Selim, X. Chen, Ahmad B. Albadarin, and Z. Li. 2021. 'Intensification of heat transfer with inclusion of nanoparticles and employ of Coulomb forces inside a driven enclosure', *Chemical Engineering and Processing - Process Intensification*, 166.
123. Soto, R., P. Patel, Ahmad B. Albadarin, M. O. Diniz, and S. P. Hudson. 2022. 'Solubility, aggregation and stability of Amphotericin B drug in pure organic solvents: Thermodynamic analysis and solid form characterization', *Journal of Molecular Liquids*, 366.
124. Stanford, C. A., M. Khraisheh, F. Al Momani, Ahmad B. Albadarin, G. M. Walker, and M. A. Al Ghouti. 2020. 'Use of nanoadvanced activated carbon, alumina and ferric adsorbents for humics removal from water: isotherm study', *Emergent Materials*, 3: 841-56.
125. Syah, R., D. Ramdan, M. Elveny, M. Mohandes, A. Khan, A. Nouri, and Ahmad B. Albadarin. 2021. 'Computational simulation of critical speed and dynamic analysis of agglomerated CNTs/fiber/polymer/metal laminates rotating cylindrical shell', *Arabian Journal of Chemistry*, 14.
126. Tamer, T. M., M. N. Collins, K. Valachová, M. A. Hassan, A. M. Omer, M. S. Mohy-Eldin, K. Švík, R. Jurčík, L. Ondruška, C. Biró, Ahmad B. Albadarin, and L. Šoltés. 2018. 'MitoQ loaded chitosan-hyaluronan composite membranes for wound healing', *Materials*, 11.

127. Trujillo, M. C., M. A. Martín-Lara, Ahmad B. Albadarin, C. Mangwandi, and M. Calero. 2016. 'Simultaneous biosorption of methylene blue and trivalent chromium onto olive stone', *Desalination and Water Treatment*, 57: 17400-10.
128. Walker, G. M., Ahmad B. Albadarin, A. McGlue, S. Brennan, and S. E. J. Bell. 2016. 'Analysis of friction factor reduction in turbulent water flow using a superhydrophobic coating', *Progress in Organic Coatings*, 90: 472-76.
129. Yanyan, L., T. A. Kurniawan, Ahmad B. Albadarin, and G. Walker. 2018. 'Enhanced removal of acetaminophen from synthetic wastewater using multi-walled carbon nanotubes (MWCNTs) chemically modified with NaOH, HNO₃/H₂SO₄, ozone, and/or chitosan', *Journal of Molecular Liquids*, 251: 369-77.
130. Yanyan, L., T. A. Kurniawan, Z. Ying, Ahmad B. Albadarin, and G. Walker. 2017. 'Enhanced photocatalytic degradation of acetaminophen from wastewater using WO₃/TiO₂/SiO₂ composite under UV–VIS irradiation', *Journal of Molecular Liquids*, 243: 761-70.
131. Yanyan, L., T. A. Kurniawan, M. Zhu, T. Ouyang, R. Avtar, M. H. Dzarfan Othman, B. T. Mohammad, and Ahmad B. Albadarin. 2018. 'Removal of acetaminophen from synthetic wastewater in a fixed-bed column adsorption using low-cost coconut shell waste pretreated with NaOH, HNO₃, ozone, and/or chitosan', *Journal of Environmental Management*, 226: 365-76.
132. Zamboni, F., M. Keays, S. Hayes, Ahmad B. Albadarin, G. M. Walker, P. A. Kiely, and M. N. Collins. 2017. 'Enhanced cell viability in hyaluronic acid coated poly(lactic-co-glycolic acid) porous scaffolds within microfluidic channels', *International Journal of Pharmaceutics*, 532: 595-602.
133. Zhang, Y. F., A. Shafee, M. M. Selim, A. Issakhov, and Ahmad B. Albadarin. 2021. 'Heat transfer through a spiral tube with considering charging of nanoparticle-enhanced paraffin', *Journal of Molecular Liquids*, 339.
134. Ziaee, A., Ahmad B. Albadarin, L. Padrela, A. Faucher, E. O'Reilly, and G. Walker. 2017. 'Spray drying ternary amorphous solid dispersions of ibuprofen – An investigation into critical formulation and processing parameters', *European Journal of Pharmaceutics and Biopharmaceutics*, 120: 43-51.
135. Ziaee, A., Ahmad B. Albadarin, L. Padrela, T. Femmer, E. O'Reilly, and G. Walker. 2019. 'Spray drying of pharmaceuticals and biopharmaceuticals: Critical parameters and experimental process optimization approaches', *European Journal of Pharmaceutical Sciences*, 127: 300-18.
136. Ziaee, A., Ahmad B. Albadarin, M. T. Ung, T. Femmer, G. Walker, and E. O'Reilly. 2020. 'A rational approach towards spray drying of biopharmaceuticals: The case of lysozyme', *Powder Technology*, 366: 206-15.
137. Ziaee, A., S. O'Dea, A. Howard-Hildige, L. Padrela, C. Potter, J. Iqbal, Ahmad B. Albadarin, G. Walker, and E. J. O'Reilly. 2019. 'Amorphous solid dispersion of ibuprofen: A comparative study on the effect of solution-based techniques', *International Journal of Pharmaceutics*, 572:118816.