

Curriculum Vitae

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Biographical Sketch

Prof. Fahmi Abu Al-Rub is a Member of Trustees at the German Jordan University. He is a professor of chemical and biochemical engineering at Jordan University of Science Technology (JUST). Prof. Abu Al-Rub is the Director of the Applied Scientific Research Fund (ASRF); an NGO non-profit organization that aims at promoting the innovation and entrepreneurial culture among young researchers. During his volunteer work at ASRF, Abu Al-Rub secured many external funds and supported many young researchers establish their own business based on their innovative ideas; three of them were females. Abu Al-Rub is on the board of the COST Programme: European Network to connect research and innovation efforts on advanced Smart Textiles (CONTEXT) CA17107. Abu Al-Rub was an advisor at Al-Ahlyyah Amman University. He is/was an Accreditation and Engineering Curriculum Development Consultant at JUST, the University of Jordan, Hashemite University, and Amman Al-Ahleyyah University (AAU). He is on the Board of Center of Excellence for Innovative Projects at JUST. He was the Chairman of the Board of Center for E-Learning and Open Educational Resources at JUST (2018-2020). He was the Dean of Research at JUST during 2009-2013. He reformed the Deanship of Research at JUST where he established the Technology Transfer Office and the Externally Funded Research Office. Prof. Abu Al-Rub was a Member Board of Trustees at Philadelphia University (2009-2013). He was a Key Expert at the EMUNI University-Slovenia which was established by the European Union. He established the first Master's Program in the World on De-Pollution of the Mediterranean, which was developed to be hosted by three European Universities; this was part of ENPI/2009/226-459 Project. He is/was a partner in 39 EU, FAO, and US projects with a budget exceeding 45.0 M€; Twenty ERASMU+ Projects, Four TEMPUS Projects, three ENI project, two ENPI project, Two ERANETMED projects, one FAO project, three USAID project, one PRIMA project, two ERANET MED projects, and one NSF project. He was also a monitoring manager for two ENPI projects with a budget exceeding 4.0 M€. He was a member of the steering committee on the UNDP project: Developing Policy-Relevant Capacity for Implementation of the Global Environmental Conventions in Jordan/Jordan Ministry of Environment. Prof. Abu Al-Rub was a member of the Higher Council for Science & Technology Committee to develop the first Jordanian Code of Ethics in Research. He was

the founder and editor in chief of the Deanship of Research Newsletter-JUST. He was a consultant on Water Quality in Yarmouk Basin/ORIENT. He supervised many workshops on EU Research Proposals Preparation, International Proposal Evaluation, Innovation in Research, Impact Assessment of Research. Prof. Abu Al-Rub reviewed two Master's Programs at the American University at Beirut. Abu Al-Rub was the Vice Dean of Engineering at JUST from 2006-2009. His responsibilities included quality and accreditation of all engineering programs at JUST, curriculum development, and budget. Prof. Abu Al-Rub has supervised the preparation of all Engineering Departments at JUST for ABET. He supervised the revision of the curricula of all departments to meet ABET requirements. He was a professor of Chemical Engineering and Biochemical Engineering in the Chemical and Petroleum Engineering Department at the UAE University in the United Arab Emirates until September 2006. Previously, he held positions of Associate Professor at the UAE University (2001-2005), Associate Professor at Jordan University of Science and Technology in Jordan (2000-2001), Visiting Scholar at Worcester Polytechnic Institute, MA, USA (Summer 1999), Assistant Professor at Jordan University of Science and Technology in Jordan (1995-2000), Postdoc. Associate at the Department of Chemical and Biochemical Engineering at the University of Iowa, Iowa, USA (1994) and Technical Brand Manager/Packaging Engineer with the Procter & Gamble Co. (89-91). Prof. Abu Al-Rub obtained his B.Sc. (1988) and M.Sc. (1990) in Chemical Engineering with excellent rating from the University of Jordan in Amman (Jordan), his PhD (1994) in Chemical and Biochemical Engineering with GPA of 4.0/4.0 from the University of Iowa in the USA.

Prof. Abu Al-Rub received in 2016, the King Abdullah the Second Award in Innovation. He is/was member of the Editorial Board of: the Journal Biomass Conversion and Biorefinery, the Journal of Environment & Biotechnology Research, the International Journal of General Engineering and Technology (IJGET), the Recent Patents on Chemical Engineering, and the Research Journal of Chemistry and Environment, the Chairman of the First and Second Funded Research Conference at JUST (2012, 2012). He was the Co-Chairman of the Environmental Design Competition (EDC 2006), and member of the Editorial Board of the World of Engineers Magazine, UAE, 2004-2006. He is/was a member of the Organizing Committee of the following international conferences: the 1st International Nuclear and Renewable Energy Conference (INREC10), Amman, Jordan, March 21-24, 2010, the Third International Conference on Thermal Engineering Theory and Applications (ICTEA 07) held in Jordan 2007, the Second International Conference on Thermal Engineering Theory and Applications (ICTEA 06) held in Al-Ain, UAE Jan 2006, the International Advisory Committee of the VAFSEP 2004 conference, Dublin, Ireland, July 6-9, 2004, EDC 2004, UAE 2004, and the Jordan International Chemical Engineering Conference III, Amman, Sep. 1999. Prof. Abu Al-Rub was the Vice President of the Advisory Committee of the Institute of Arab Child Culture in Jordan (2000-2002). He was listed in the 22nd edition, 2004-2005 of Who's Who in the World Marquis, Who's Who professional series, and in the 8th edition, 2004-2005 of Who's Who in Science and Engineering, Marquis Who's Who professional series. He received "Alsafeer Al-Arabi" Science and Culture Certificate: Institute of Arab Culture, Jordan, **Abdel-Hameed Shoman Award for Young Arab Researchers 2001: Engineering Sciences (July**

2003); the most prestigious award in Arab World, Excellence Award in Teaching/College of Engineering, 2004, UAEU.

Prof. Abu Al-Rub has active research in Renewable Energy, Biofuels, Desalination, Wastewater Treatment, Process Synthesis and Process Control, Environment, Development of New Adsorbents for wastewater treatment, Thermodynamics and Fluid phase Equilibria, Novel Separation methods (e.g., Capillary Distillation, Adsorptive Distillation), Biochemical Engineering (Bioseparation). Prof. Abu Al-Rub has developed new theories in Phase Equilibria inside Capillary Porous Media and developed a new model to predict the vapor-liquid equilibrium of mixtures inside capillary porous plates. He published more than 95 papers in peer reviewed top international journals and proceedings of national, regional, and international scientific conference. The h-index and the i10-index of Prof. Abu Al-Rub according to Google Scholar are 25, and 39, respectively, with 1899 total citations (As of September 3, 2020). Prof. Abu Al-Rub supervised the undergraduate final projects of more than 100 students, the M.Sc theses of more than 25 students, one PhD student in Algeria, and acted as external examiner for many M.Sc theses in Jordan and UAEU.

Prof. Abu Al-Rub is a peer reviewer of numerous top international journals, such as *J. Porous Media*, *Proc. Biochem., Sep. Sci. & Technol.*, *J. Hazard. Mater.*, *Ads. Sci. & Technol.*, *J. Chem. Technol. & Biotechnol.*, *Chem. Eng. Commun. Journal*, *Chem. Eng. Data Journal*, *Environ. Model. Soft. Journal*, *Chem. Eng. Journal*, *Fluid Phase Equilibri.*, *the Journal Biomass Conversion and Biorefinery*.

Personal Information

Citizenship: Jordanian/Canadian

Sex: Male

Marital Status: Married

Education

Ph.D. Chemical and Biochemical Engineering

The University of Iowa, Iowa City, IA, USA,

Aug. 1991-Aug. 1994

GPA: 4.0/4.0

(Dissertation: "Distillation in Capillary Porous Media for Separation of Biomass Ethanol-Water Mixtures")

Advisor: Professor Ravindra Datta

M.Sc. Chemical Engineering

The University of Jordan, Amman, Jordan,

Feb. 1988-Jan. 1990

Rating: Excellent

(Thesis: "Energy Conservation Using Process Integration Methods")

Advisor: Prof. Seham Al-Tematmi

B.Sc. Chemical Engineering

The University of Jordan, Amman, Jordan,

Sept. 1983-Jan. 1988

Rating: Excellent.

Honors and Awards

Post-Graduate Awards

- Board Member of Trustess, German Jordan University 2019-Present
- King Abdullallah the Second Award in Innovation, 2016
- Board Member of Trustees, Philadelphia University 2009-2013
- Board member of Yarmouk University Research Council 2011-2015
- The EMUNI key expert to develop the Master Degree in De-Pollution of the Mediterranean, an ENPI funded project 2010-2012
- *Abdel-Hameed Shoman Award for Young Arab Researchers: Engineering Sciences 2001*. This is the most prestigious award in the Arab World. July 2003
- Excellence Award in Teaching/College of Engineering, UAEU, 2004

- Vice President of the Advisory Committee of the Institute of Arab Child Culture, Jordan 2000-2002
- Who's Who in Science and Engineering, Marquis Who's Who professional series, the 8th edition, 2004-2005: Acknowledgement of the distinguished contributions to the community of chemical engineering researchers.
- Who's Who in the World Marquis, Who's Who professional series, the 22nd edition, 2004-2005: Acknowledgement of the distinguished contributions to the community of chemical engineering researchers.
- Certificate of Appreciation from the Female Creativity Club, UAEU, 2004
- Certificate of Appreciation from the Central Committee for Honors Students Program Supervision, UAEU 2003
- Ph.D. scholarships for my students from WPI, USA 1999-2001
- "*Alsafeer Al-Arabi*" Science and Culture Certificate: Institute of Arab Culture 1999

Ph.D. Awards

- \$75,000 fund project: Iowa Corn Promotion Board May, 92-May, 95
- Scholarship to pursue Ph.D. study in the USA: JUST Sept. 91-Sept. 94
- Teaching Assistantship: The University of Iowa June, 92-June 94
- Research Assistantship: The University of Iowa Jan. 93-Aug. 94

M.Sc. Awards

- Teaching Assistantship: The University of Jordan Feb. 88-June 89

B.S. Awards

- Scholarship to pursue B.Sc.: (Royal Mukromah) Aug. 83-Jan 88

Languages

- Fluent in Arabic and English.

Professional Experience

- Applied Scientific Research Fund (ASRF)
Director 2015-Present
- Al-Ahlyyah Amman University
Advisor 2016-2017

The University of Jordan Accreditation Consultant	2013-2014
Jordan University of Science and Technology Accreditation Consultant	2013-Present
Department of Chemical Engineering Jordan University of Science & Technology, Jordan Professor	2013-Present
Deanship of Research Jordan University of Science & Technology, Jordan Dean	2009-2013
Euro-Mediterranean University, Slovenia Key Expert	2010-2012
Faculty of Engineering Jordan University of Science & Technology Vice Dean of engineering	2006-2009
Department of Chemical & Petroleum Engineering United Arab Emirates University (UAEU), UAE Professor	2005-2006
Department of Chemical & Petroleum Engineering United Arab Emirates University (UAEU), UAE Associate Professor	2001-2005
Department of Chemical Engineering Jordan University of Science & Technology Associate Professor	2000- 2001
Department of Chemical Engineering Jordan University of Science & Technology 2000 Assistant Professor	Jan. 95- Jan.
Department of Chemical Engineering Worcester Polytechnic Institute (WPI), MA, USA Visiting Scholar	Summer 1999
Department of Chemical & Biochemical Engineering	

The University of Iowa, Iowa City, IA, USA, 94 Postdoc. Assoc.	Aug. 94-Dec.
Department of Chemical & Biochemical Engineering The University of Iowa, Iowa City, IA, USA, Teaching and Research Assistant	Aug. 92-Aug. 94
Procter & Gamble/MIC Saudi Arabia, Technical Brand Manager/Packaging Engineer	Jun. 89-Jan. 91
Department of Chemical Engineering The University of Jordan, Amman, Jordan Teaching Assistant	Feb. 88-Jun. 89
Cement Industry, Slite-Sweden	June 87-Aug. 87

Administrative Activities

Board of Trustees, German Jordan University 2018- Present

- Member of the Board of Trustees at Philadelphia University.

Board Member of Center of Excellence for Innovative Projects at JUST. 2019-present

Chairman of Board of Center for E-Learning and Open Educational Resources at JUST. 2018-2020

- **Member of the Board of Trustees at Philadelphia University.**

Board of Trustees, Philadelphia University 2009-2013

- Member of the Board of Trustees at Philadelphia University.
- Member of the Academic Committee of the Board of Trustees at Philadelphia University.
- Participated in preparing the strategic plan for Philadelphia University for the period of 2012-2017.

Director of the Applied Scientific Research Fund

- Managing all issues technical, financial, administrative issues at ASRF
- Developing and implementing the strategic plan for ASRF

- Securing external funds for ASRF

Dean of Research at Jordan University of Science and Technology

- Chaired the University Research Council.
- Assumed the responsibility of managing, and monitoring all research activities at the university, Evaluation of all research projects at the university, Coordinating all externally funded projects at JUST.
- Established a new office; the Technology Transfer Office, as part of the Deanship of Research, to handle all issues related to commercialization, IP, and technology transfer.
- Established a new office; the Externally Funded Research Office, as part of the Deanship of Research, to manage and secure external funds for JUST.
- The founder and editor in chief of the Deanship of Research Newsletter-JUST, which was published 3 times a year by the Deanship of Research to highlight the major activities carried out at JUST.
- Submitted, in 2012, with faculty members at JUST more than 50 EU projects with a budget exceeding 60.0 M€.
- Supervised the process of transferring the Deanship of Research at JUST into an e-Deanship; where all main activities of the Deanship of Research, such as proposal submission, monitoring, management and approval of submitted proposals, filing, financial reporting, and funding, are managed electronically.
- Prepared the university policy and regulations on Conflict of Interest.
- Prepared the university policy and regulations on Code of Ethics in Research at JUST.
- Prepared the university policy and regulations on Authorship.
- Revised the university policy and regulations on Promotion.
- Prepared the university policy and regulations on hiring researchers and postdoctoral associates.
- Prepared the university policy and regulations on Incentives and Awards for Distinguished Achievements in Research.
- Revised the university policy and regulations on Research.
- Prepared the Deanship of Research budget during the period 2010-2013.
- Represented the University President in all meetings, agreements, and MoUs related to research.
- Supervised orientation seminars to new faculty members at JUST “Guidelines for research funding at JUST”, organized by the Academic Development Center, JUST, 2011, 2012.
- Supervised a study to acknowledge faculty members at JUST based on their publications in ISI, and Scopus for period (2009-2012). The results of the study were published in most Jordanian Newspapers.
- Supervised a survey study to acknowledge faculty members at JUST based on their publications in Scopus and patent activity for period (2006-2010). The

- results of the survey study were reported in the Deanship of Research Newsletter, Issue 2, 2011.
- Supervised and Chaired the First and Second Funded Research Conference at JUST (2012, 2013).
 - Supervised the preparation of the financial report for “Internal and External Funded Projects at Deanship of Research in 2010”. The results of the study were reported in the Deanship of Research Newsletter, Issue 1, 2011.
 - Supervised and submitted the Deanship of Research Annual Reports: 2009-2012.
 - Reviewed, approved, and nominated more than 1000 proposal for internal funding from JUST.
 - Reviewed and approved all sabbatical proposals submitted during 2009-2013.
 - Reviewed, approved, of all sabbatical reports submitted during 2009-2013.
 - Reviewed, and approved of all sabbatical reports submitted during 1987-2009, which were not approved previously.
 - Supervised and be involved in writing and reviewing Agreements and Memorandum of Understanding between JUST and external institutes, organizations, companies, or funding agencies.
 - Supervised a survey study related with the evaluation of the performance of the Deanship of Research and other units at JUST which are parts of the funding process to assess its activities, improve, and facilitate the funding process. Additionally, the study recommended new procedure for billing and reimbursement. The results of the study were reported in the Deanship of Research Newsletter, Issue 2, 2010.
 - Organized visits by local and international experts to JUST to foster the cooperation of JUST with the internal and external funding agencies, local industry, and local community.
 - Supervised organizing workshops and seminars to researchers at JUST to increase their awareness on the procedures for proposal submission to international funding programmes such as the 7th Framework Programme (FP7), Tempus, Erasmus Mundus, and Marie Curie.
 - Supervised the preparation of the application form for JUST to apply for Developing Islamic Bank Award in 2009. The application form submitted by JUST consists of more than 300 pages including JUST profile, the scientific activities (seminars, workshops, conferences, scientific days, and consultations), publications (books, chapter in books, Journal articles, proceedings), patents, the JUST awards, the Awards granted by faculty members at JUST, the scientific and social impacts of JUST, the cooperation of JUST with local and international organizations.
 - Supervised the preparation of proposing the regulation on “The ethical guidelines for using stem cells in scientific research”.
 - Organized, in collaboration with the Federation of Arab Scientific Research Councils, the Symposium: "The role of scientific research in production of biogas

from plant and animal wastes”, Jordan University of Science and Technology, Irbid, 16-17 March 2011.

Key Expert at Euro-Mediterranean (EMUNI), Slovenia

- Was selected by the European Commission as a key expert at EMUNI University-Slovenia which was established by the European Union.
- Managed, supervised, and coordinated the work of five experts from France, Greece, Croatia, Lebanon, and Jordan to establish the first Master's Program in the World on De-Pollution of the Mediterranean which will be hosted by three European Universities. This is was part of (ENPI/2009/226-459 Project).
- Established the first Master's Program in the World on De-Pollution of the Mediterranean.
- Represented EMUNI and JUST at many EU meetings.

Vice Dean of Engineering at Jordan University of Science and Technology

- Assumed quality assurance and accreditation, curriculum development, and budget responsibilities for all engineering departments at JUST.
- The founder and editor in chief of the JUST ABET Newsletter-JUST
- Represented JUST in ABET meetings at ABET Headquarters, USA, July 2008.
- Represented JUST in many ABET Committee meetings at the Ministry of Higher Education, during 2007-2008.
- Supervised the preparation of all Engineering Departments at JUST for ABET.
- Supervised the revision of the curricula of all departments to meet ABET requirements.
- Chaired ABET, Curriculum, and Budget Committees in the Faculty of Engineering at JUST during 2006-2009.
- Carried out extensive and intensive workshops for engineering faculty members at JUST on course, program, and curriculum assessment and evaluation, and ABET requirements.
- Developed course, program, and curriculum assessment tools used by all engineering programs at JUST.
- Developed all forms used in surveys, such as, Alumni, Employers, Industrial Training, Exit, etc., surveys.
- Supervised the preparation of all self-study reports submitted for ABET accreditation.
- Established regulations on Graduation Projects for all engineering departments at JUST.

The academic advisor of the first-year engineering students, United Arab Emirates University, 2003-2006

- Advised all male and female first year engineering students at UAEU in terms of course schedules, study plans, and specialization.
- Organized many lectures and presentations for all male and female first year engineering students at UAEU to help them choose the engineering program that fits them.
- Prepared "ranking" lists of all male and female first year engineering students at UAEU to help distributing them to the different engineering programs.

Workshops and Industrial Conferences

- How to Apply and Manage Erasmus+ Projects, JUST, 2018, 2019, 2020
- Workshops on Assessment Methods used in ABET preparation, Prof. Fahmi Abu Al-Rub, AAU, 2016, 2017.
- Workshops and seminars on ABET preparation, Prof. Fahmi Abu Al-Rub, AUA, 2016, 2017.
- Workshops on Assessment Methods used in ABET preparation, Prof. Fahmi Abu Al-Rub, JUST, 2014.
- Workshops and seminars on ABET preparation, Prof. Fahmi Abu Al-Rub, JUST, 2014.
- Workshops on Assessment Methods used in ABET preparation, Prof. Fahmi Abu Al-Rub, JU, 2014.
- Workshops and seminars on ABET preparation, Prof. Fahmi Abu Al-Rub, University of Jordan, 2014.
- Workshops on EU research proposals preparation, Proposal Evaluation, International Proposal Evaluation, Innovation in Research, Impact Assessment of Research.
- Workshops on ISO 9001: Requirement, Preparation, Implementation, Gap Analysis, Internal Audit, and External Audit, Prof. Fahmi Abu Al-Rub, Jordan Engineers Association, Jordan, 2008.
- Workshops on preparation of engineers to careers in business, Prof. Fahmi Abu Al-Rub, Jordan Engineers Association, Jordan, 2007.
- Steps to Success: Writing Effective Resume, Prof. Fahmi Abu Al-Rub, Jordan Engineers Association, Jordan, 2007.
- Career Start-Up: Interview Skills Workshop, Prof. Fahmi Abu Al-Rub, Jordan Engineers Association, Jordan, 2007.
- Work Ethics and Employers Expectations Workshop, Prof. Fahmi Abu Al-Rub, Jordan Engineers Association, Jordan, 2007.
- Managing by Leading Workshop, Prof. Fahmi Abu Al-Rub, Jordan Engineers Association, Jordan, 2007.
- Workshops on Assessment Methods used in ABET preparation, Prof. Fahmi Abu Al-Rub, JUST, 2006.

- Workshops and seminars on ABET preparation, Prof. Fahmi Abu Al-Rub, JUST, 2006.
- Educational Outcomes Assessment Workshop", College of Engineering, UAEU, Feb. 3-4, 2002.
- The 16th Workshop on Measurement and Evaluation Technology, JUST, Feb. 1-Feb. 3, 1999.
- Total Quality Approach (TQA) Workshop, Jeddah, Saudi Arabia, May 26, 1990.
- Interpersonal Managing Skills (IMS) Workshop, Saudi Arabia, April 1-April 2, 1990.
- M&W Polybag Production Workshop, Germany, Nov. 6, 1989.
- Environmental Friendly Package Conference, Germany, Nov. 4-Nov. 5, 1989.
- World Diaper Packaging Conference, Schwalbach, Germany, Oct. 30-Nov. 3, 1989.
- Kobusch Polybag Production Workshop, Postfach, Germany, Oct. 5-Oct. 6, 1989.

Professional Activities and Affiliations

- The **EMUNI key expert to develop the Master Degree in De-Pollution of the Mediterranean**, an ENPI funded project.
- Founder and the editor in chief of Deanship of Research Newsletter/JUST.
- Member of steering committee on the UNDP project: Developing policy-relevant capacity for implementation of the Global Environmental Conventions in Jordan/Jordan Ministry of Environment.
- Consultant on Water Quality in Yarmouk Basin/ORIENT.
- Member of the Higher Council for Science & Technology committee to develop the first Jordanian Code of Ethics in Research.
- Board member of JUST Nanotechnology Center
- Board member of JUST Energy Center
- Board member of JUST Pharmaceutical Studies Center
- Board member of JUST Consultative Center
- An ABET Consultant at JU
- An ABET Consultant at JUST
- An ABET Consultant at the Hashemite University
- Member of the Editorial Board of the International Journal of General Engineering and Technology (IJGET)
- Was Member of the Editorial Board of the Journal of Environment & Biotechnology Research
- Was Member of the Editorial Board of the Recent Patents on Chemical Engineering
- Was Member of the Canadian Society for Chemical Engineering (CSChE), Canada.
- Was Member of the Canadian Society for Chemical Technology (CSCT), Canada.
- Was Member of the Canadian Society for Chemistry (CSC), Canada.
- Was Member of the International Union of Pure and Applied Chemistry, Canada.

- Was Member of the Chemical Institute of Canada, Canada.
- Member of the Editorial Board of the Research Journal of Chemistry and Environment.
- Chairman of the First Funded Research Conference at JUST, 2012
- Chairman of the Second Funded Research Conference at JUST, 2013.
- Co-Chairman of the Environment Design Completion 2006.
- Member of the organization committee The Third International Conference on Thermal Engineering Theory and Applications (ICTEA 07), 2007, Jordan.
- Member of the Organizing Committee of The Second International Conference on Thermal Engineering Theory and Applications (ICTEA 06) held in Al-Ain, UAE Jan 2006.
- Chaired and co-chaired three sessions in The Second International Conference on Thermal Engineering Theory and Applications (ICTEA 06) held in Al-Ain, UAE Jan 2006.
- Member of the International Advisory Committee of the VAFSEP 2004 conference, Dublin, Ireland, July 6-9, 2004.
- Member of the Editorial Board of the World of Engineering Magazine, UAE.
- Vice President of the Advisory Committee of the Institute of Arab Child Culture, 2000-2002.
- Member in the "evaluation" committee for creative works at the UAEU.
- Reviewer of the Recent Patents on Chemical Engineering
- Reviewer of the Journal *Hazar. Mater.*
- Reviewer of the *Ads. Sci. & Technol.*
- Reviewer of the *J. Chem. Technol. & Biotechnol.*
- Reviewer of the *Ads. Sci. & Technol.*
- Reviewer of the *Chem. Eng. Commun. Journal.*
- Reviewer of the *Chem. Eng. Data Journal.*
- Reviewer of the *Proc. Biochem. Journal.*
- Reviewer of the *Environ. Model. Soft. Journal.*
- Reviewer of the *Chem. Eng. Journal.*
- Reviewer of the *Sep. Sci. & Technol* Journal.
- Reviewer of the *Fluid Phase Equilibria* Journal.
- Member of Environment Design Contest Committee, 2003-Present.
- Reviewer in the Jordanian Chemical Engineering Conference II, 1996.
- Reviewer of the Jordan International Chemical Engineering Conference III, Amman, Sep. 1999.
- Member of the organization committee of the Environment Design Contest 2004.
- Member of the Technical Committee in the Jordan International Chemical Engineering Conference III, Amman, Sep. 1999.
- Member of the Organization Committee in the Jordan International Chemical Engineering Conference III, Amman, Sep. 1999.

- Member of Jordan Assoc. Engineers.
- Member of Jordan Committee of Environment.
- Organized lectures in Marketing and Management in Chemical Engineering, JUST, 1997.

Services for Educational Institutes and Society

1. Development of Academic Program

1. Jordan Coordinator of an EU-JO project on “Urban sustainable development SOLutions Valuing Entrepreneurship/U-Solve,” ENI CMC MED-EU, 2020 (~EURO 3,000,000).
2. Jordan Coordinator of an EU-JO project on “Mediterranean Youth, NEETs and women advancing Skills, Employment and Awareness in the blue and green economy/MYSEA,” ENI CMC MED-EU, 2020 (~EURO 3,000,000).
3. Jordan Coordinator of an EU-JO project on “Trace & Trust Hubs for MED food Med Food/TTHubs,” PRIMA-EU, 2020 (~EURO 1,600,000).
4. Project Coordinator of an EU-JO project on “Establishment of Intercalated Program in Basic Medical Sciences in Jordan/ iBMS-JO,” ERASMUS+-EU, 2019 (EURO 1,000,000).
5. JUST Coordinator of an EU-JO Project on “Developing Multidisciplinary Diploma on Art Therapy in Health Education"-Healing,” ERASMUS+-EU, 2019 (~EURO 900,000).
6. JUST Coordinator of an EU-JO Project on “Enhancing Teaching, Learning and Graduate Employability through University-Enterprise Cooperation/ELEGANT,” ERASMUS+-EU, 2019 (~EURO 1000,000).
7. Jordan Coordinator of an EU-JO project on “Fostering innovation in the Jordan and Moroccan textile industry/FOSTEX,” ERASMUS+-EU, 2018 (~EURO 1,000,000).
8. Jordan Coordinator of an EU-JO project on “Innovations in Water Education Programs: Enhancing Water Security and Socio-economic Development in the Eastern Mediterranean under Climate Change/WaSec,” Erasmus+-EU, 2018 (~EURO 810,000).
9. Jordan Coordinator of an EU-JO project on “Promotion Youth Employment In Remote Area In Jordan/JOBJO,” ERASMUS+-EU, 2018 (~EURO 700,000).
10. JUST Coordinator of an EU-JO Project on “Developing Multidisciplinary Diploma on Art Therapy in Health Education"-Healing,” ERASMUS+-EU, 2019 (~EURO 900,000).
11. Jordan Coordinator of an EU-JO project on “MediTec- Training for Medical Education via Innovation e-Technology,” ERASMUS+-EU, 2017 (~EURO 1,000,000).
12. Jordan Coordinator of an EU-JO project on “INNOLEA- Innovation for the Leather Industry in Jordan and Egypt,” ERASMUS+-EU, 2017 (~EURO 1,000,000).

13. JUST Coordinator of an EU-JO project on “HEBA- High level Renewable and Energy Efficiency Master Courses,” ERASMUS+-EU, 2017 (~EURO 1,000,000).
14. JUST Coordinator of an EU-JO project on “MEDACCR- On-Line Quality Assurance and EUR-ACE Accreditation of Engineering Programmes in Mediterranean Area,” ERASMUS+-EU, 2017 (~EURO 650,000).
15. Project Coordinator of an EU-JO project on “FOODQA - Fostering Academia-Industry Collaboration in Food Safety and Quality,” ERASMUS+-EU, 2016 (~EURO 1,000,000).
16. JUST coordinator Member of an EU-JO project on “Development of environmental engineering courses and injection of climate change concept for undergraduate curriculum: EU experience for Jordan and Syria “EGREEN”,” ERASMUS+-EU, 2016 (~EURO 1,000,000).
17. JUST coordinator of an EU-JO project on “Developing an MSc Programme in Climate Change, Sustainable Agriculture and Food Security (CCSAFS),” ERASMUS+-EU, 2016 (~EURO 1,000,000).
18. Coordinator of an EU-JO project on “Advance Materials for the Treatment of the Wastewater of the Textile Industry in the Mediterranean Basin (TREAT-MED),” ERANETMED, 2016 (~EURO 900,000).
19. Coordinator of an EU-JO project on “Anywhere Water Desalination Plant to Improve Human Development,” ERANETMED, 2016 (~EURO 900,000).
20. Women’s Engineering Participation in the US: What can the US Learn from Women’s Decisions to Pursue Engineering in Diverse Predominantly Muslim Settings?, NSF, 2016 (~\$ 600,000).
21. Project Coordinator of “Assessment of the Socio-Economic Impact of Transboundary Animal Diseases (TADS) on Livestock Sector in Jordan,” FAO, 2016 (~\$ 90,000)
22. “Innovators in the making” USAID, fhi360 program project,” 2016, (~\$ 100,000)
23. Applicant of EU, and Jordanian team to promote innovation in the higher education in Jordan: “Promotion of Innovation Culture in the Higher Education in Jordan (INVENT)”, ERASMUS+-EU, 2015 (~EURO 900,000).
24. Local Coordinator of EU, and Jordanian team to enhance graduates skills to meet the market needs: “Vocational training center for undergraduate university students and teachers in Jordan (VTC)”, ERASMUS+-EU, 2015 (~EURO 1,000,000).
25. Member of EU, and Jordanian team to develop higher education in Jordan by using mobile technology: “Improving Higher Education Quality in Jordan using Mobile Technologies for Better Integration of Disadvantaged Groups to Socio-economic Diversity - mEQUITY”, ERASMUS+-EU, 2015 (~EURO 1,000,000).
26. Local Coordinator of EU, Mediterranean countries, and Jordanian team to develop skills in the field of integrated energy: “agreement Developing skills in the field of integrated energy planning in Med landscapes ENEPLAN”, ERASMUS+-EU, 2015 (~EURO 1,000,000).
27. Member of EU, Palestine, and Jordanian team to modernize teaching methods in Jordan and Palestine: “Modernization of Teaching Methodologies in Higher

- Education: EU experience for Jordan and Palestinian Territory, (METHODS)", ERASMUS+-EU, 2015 (~EURO 1,000,000).
28. Local Coordinator of EU, Mediterranean countries, and Jordanian team to develop a master degree in the energy management: "Smart Control Systems for Energy Management: New Master Degree (SEM-SEM)", ERASMUS+-EU, 2015 (~EURO 1,000,000).
 29. Member of EU, and Mediterranean Countries team to modernize curriculum in Nursing, Engineering, Business, and Law according to Bologna Process: "Tuning Middle East and Africa (T-MEDA)", 2014 (~EURO 1,500,000).
 30. Member of EU, Egyptian, and Jordanian team to develop a Master's Program in Intelligent Transport System (ITS): "EU-EG-JO Joint Master Programme in Intelligent Transport Systems" TEMPUS-EU, 2013- (~EURO 1,000,000).
 31. Member of EU, and Jordanian team to modernize undergraduate curriculum in Renewable Education: "Modernizing Undergraduate Renewable Energy Education: EU Experience for Jordan, MUREE" TEMPUS-EU, 2013- (~EURO 1,150,000).
 32. Member of EU, and Jordanian team to develop a Master's Program in Renewable Education: "Master on Sustainable Development and Renewable Energy, MANSUR" TEMPUS-EU, 2010-2013 (EURO 1,200,000).
 33. Head of the EU, and Mediterranean Countries Experts to develop and establish the first Master's Program in the World on De-Pollution of the Mediterranean which will be hosted by three European Universities. This was part of ENPI/2009/226-459 Project.

2. Teaching Experience

- Participated in the development of the MSc curriculum in Renewable Energy
- Participated in the development of the MSc curriculum in Intelligent Transport Systems
- Developed a Laptop project for the Introduction to Chem. Eng. Course, 2003.
- Developed Chemistry and Engineering Applications II as a Laptop course.
- Co-developed a Laptop project for the Separation and Treatment of Petroleum Fluids Course, 2006.
- Taught different undergraduate Chemical Engineering, and Fundamental Engineering Courses at JUST and UAEU. These include:
 - Chemistry and Engineering Application I
 - Materials Engineering and Science
 - Introduction to Chemical Engineering
 - Principles of Chemical Engineering
 - Fluid Mechanics
 - Numerical Analysis
 - Thermodynamics I
 - Chemical Engineering Thermodynamics

- Biochemical Engineering
 - Special Topics in Chemical Engineering
 - Heat Transfer
 - Fluid Mechanics Lab
 - Heat Transfer Lab
 - Unit Operations Lab
 - Measurements Lab
 - Chemical Processing Lab
- Taught different graduate Chemical Engineering courses at JUST. These include:
 - Advanced Transport Phenomena
 - Advanced Thermodynamics
 - Special Topics
 - Taught different graduate Renewable Energy at JUST. These include
 - Research Methodology
 - Biofuels

3. Graduation Projects

Supervised the graduation projects for more than 100 students at JUST and UAEU. Many of these projects participated in local, regional, and international competitions and won awards.

4. Master Theses

- Supervised and co-supervised several MS theses in the Chemical Engineering Department at JUST, the University of Jordan, and UAEU:
 1. Rahal, S., "Removal of Pharmaceuticals from Wastewater using Nanohybrid Materials Consisting of Graphene Oxide and Oxidized Carbon Nanotubes," Expected October 2020.
 2. Al-Banna, L., "Removal of Pharmaceuticals from Wastewater using Nanohybrid Activated Carbon," Expected August 2020.
 3. Mohammed, A., Development of Nanohybrid Materials Consisting of Graphene Oxide and Oxidized Carbon Nanotubes for Removal of Pharmaceutical Drugs from Aqueous Solutions, 2019
 4. Bani Salman, O., "Thermochemical Energy Storage for Solar Thermal Industrial Applications," 2018.
 5. Bani Hani, S., "Towards Green Schools in Jordan," 2018.
 6. Hasan, R., "Thermal Runaway Prevention Using Phase Change Materials Composite for Li-Ion Batteries," Aug., 2017
 7. Dhmarah, Q., "Deploying Solar Thermal Energy for Industrial Processes in Jordan," Expected, June 2017.

8. Al-Hasanat, O., "Heavy Metals Removal from Wastewater Using Magnetic Nanoparticles," May 2017
9. Al-Zoubi, M., "Using nanoparticles to remove heavy metals from wastewater," Dec. 2016.
10. Al-Zinati, N., "Conservation of Physiochemical Properties among the Listeria Genus: an Atomic Force Microscopy Study," June 2015.
11. Al-Shboul, B., "Improving the Energy Efficiency of the Residential Buildings in Irbid," May 2015.
12. Othman, R., "Developing a Microalgae Bioreactor under Jordan Conditions, for CO₂ Capturing and Biofuels Production," (co-advisor, the University of Jordan), Aug. 2015.
13. Al-Masri, R., "Production of Biodiesel from Municipal Sewage Sludge," (co-advisor, the University of Jordan, May 2015.
14. Shedid, M., "Solar Drying and Utilization of Sludge Produced at Waste Water Treatment Plants," June 2014
15. Al-Talafha, T.M., "Characterization, and Biosorption Properties of poly(N-vinylimidazole) grafted alginic acid and poly(acrylic acid) grafted alginic acid," 2013.
16. AL-Sharyani, M., "Removal of Heavy Metals from Aqueous Solutions Using Local Adsorbents," Dec. 2005.
17. Chaika, D., "Biosorption of priority pollutants of petroleum refinery wastewater," (co-advisor), May 2005.
18. Abu Dyak, K., "Optimal Design and Controllability Assessment of Network Heat Exchanger Synthesis," (co-advisor) June 2001.
19. Aldabaybah, N., "Technical Evaluation of Solid Animal Wastes as Adsorbents," (co-advisor) June 2001.
20. Al-Refae, I., "Effects Inorganic Salts on the Vapor-Liquid Equilibrium of Selected Close-Boiling Point Binary Systems," Jun, 2000.
21. Ghanim, H., "Investigation of the Effects of Pressure and Inorganic Salts on the Vapor- Liquid Equilibrium of Industrially Important Binary Systems," June 2000.
22. Bani-Melhem, K. Q., "Sensitivity Analysis of Membrane Distillation Process," May, 1998.
23. Al-Ananzeh, N. M., "Extractive Distillation Using Hydrotropes," Aug. 1998.
24. Shannag, M., "Theoretical Investigation of Multicomponent Separation Problems by Membrane Distillation," (Co-advisor) Feb. 1998.

5. PhD. Dissertations

Co-supervising the PhD of Noriah Kada: "Investigation of Marine Pollution Using Biological Indicators," Giliali University at Sidi Bilabbas- Algeria.

6. Committees

- | | |
|---|------------|
| • JUST Primary Faculty Disciplinary Board | 2013-2015 |
| • Member of Philadelphia University Board of Trustees | 2009-2013 |
| • Head of JUST Primary Faculty Disciplinary Board | 2009- 2010 |

- Member of JUST University Council 2009-2013
- Member of JUST Appeal committee for faculty Disciplinary Board 2011-2013
- Member of JUST Deans' Council 2009-2013
- Head of the Scientific Research Committee 2009-2013
- Member of Yarmouk University Scientific Research Committee 2011-2015
- Member of Philadelphia University Academic Committee 2009-2013
- Member of the Ministry of Higher Education ABET Committee 2007-2009
- Head of JUST ABET Committee 2006-2009
- Member of JUST Faculty of Engineering Council 2006-2009
- Head of JUST Faculty of Engineering Curriculum 2006-2009
- Head of JUST Faculty of Engineering Budget Committee 2006-2009

In addition to being a member of many committees at UAEU and JUST during the period 1995-2006.

Research Interests

The current research of **Prof. Abu Al-Rub** focuses on Environmental Biotechnology with emphasis on wastewater treatment, biosorption, development of local sorbents, testing and monitoring contamination of surface and ground waters, and Thermodynamics with emphasis on fundamentals and applications of thermodynamics and renewable energy.

Specifically:

- **Renewable energy:** the research on renewable energy sources has been active during the last three decades due to the increase in oil prices and the instability in oil supply. Our emphasis is to develop biofuels that can be produced feasibility. We are studying the production of biodiesel from different feedstock.
- **Development of new efficient, low-cost adsorbents:** heavy metals, such as lead, copper, zinc, cadmium, and nickel, are among the most toxic pollutants present in marine, ground, and industrial wastewaters. In addition to their toxicity effects even at low concentrations, heavy metals can accumulate throughout the food chain which leads to serious ecological and health hazards as a result of their solubility and mobility for the removal of heavy metals and other pollutants from wastewaters. Our emphasis is on developing local low-cost adsorbents for the removal of heavy metals from wastewaters.
- **Novel separation methods:** separation is one of the most important topics in chemical engineering and contributes in many cases to more than 20% of the operating cost in chemical processes. Our research focuses on developing novel separation methods. We were among the first researchers to introduce adsorptive distillation, and capillary distillation processes.

- **Sensitivity analysis of membrane distillation processes in desalination plants:** desalination plants in the Middle East account to more than 60% of the total desalination plants. Our emphasis is on investigating new desalination processes, e.g., membrane distillation, and studying the different parameters affecting the efficiency of these processes.
- **Fundamentals and applications of thermodynamics:** the use of external fields to affect thermodynamics properties of pure components and mixtures has attracted increased attention in the recent years, as their consequence on altering thermodynamics properties has been realized. Our emphasis is on developing new thermodynamics equations that can predict and/or explain these effects. Consequently, we propose applications that can benefit from these effects.

Consultancies

1. The Yarmuk River Basin Water Resources Assessment and Use, ORIENT Engineering Consultancy and Design, 2009-2011.
2. Testing of the Level of Contamination of Surface Water by Pesticides, the Jordanian General Environment Protection Agency, 2000-2001.

Funded Projects

1. Urban sustainable development SOLutions Valuing Entrepreneurship/U-Solve, ENI CMC MED-EU, 2020 (~EURO 3,000,000).
2. Mediterranean Youth, NEETs and women advancing Skills, Employment and Awareness in the blue and green economy/MYSEA, ENI CMC MED-EU, 2020 (~EURO 3,000,000).
3. Trace & Trust Hubs for MED food Med Food/TTHubs,” PRIMA-EU, 2020 (~EURO 1,600,000).
4. Establishment of Intercalated Program in Basic Medical Sciences in Jordan/ iBMS-JO, ERASMUS+-EU, 2019 (EURO 1,000,000).
5. Developing Multidisciplinary Diploma on Art Therapy in Health Education"- Healing,” ERASMUS+-EU, 2019 (~EURO 900,000).
6. Teaching, Learning and Graduate Employability through University-Enterprise Cooperation/ELEGANT,” ERASMUS+-EU, 2019 (~EURO 1000,000).
7. Jordan Coordinator of an EU-JO project on “Fostering innovation in the Jordan and Moroccan textile industry/FOSTEX, ERASMUS+-EU, 2018 (~EURO 1,000,000).
8. Innovations in Water Education Programs: Enhancing Water Security and Socio-economic Development in the Eastern Mediterranean under Climate Change/WaSec, 2018 (~EURO 810,000).
9. Promotion Youth Employment in Remote Area In Jordan/JOBJO, ERASMUS+-EU, 2018 (~EURO 700,000).
10. Developing Multidisciplinary Diploma on Art Therapy in Health Education/Healing, ERASMUS+-EU, 2019 (~EURO 900,000)

11. MediTec- Training for Medical Education via Innovation e-Technology, ERASMUS+, EU, 2017 (~EURO 1,000,000).
12. INNOLEA- Innovation for the Leather Industry in Jordan and Egypt, ERASMUS+, EU, 2017 (~EURO 1,000,000).
13. HEBA- High level Renewable and Energy Efficiency Master Courses, ERASMUS+, EU, 2017 (~EURO 1,000,000).
14. MEDACCR- On-Line Quality Assurance and EUR-ACE Accreditation of Engineering Programmes in Mediterranean Area, ERASMUS+, EU, 2017 (~EURO 650,000).
15. "Entrepreneur of the Future", USAID, \$90,000
16. Women in Charge, USAID, \$90,000
17. FOODQA - Fostering Academia-Industry Collaboration in Food Safety and Quality, ERASMUS+, EU, 2016 (~EURO 1,000,000).
18. Development of environmental engineering courses and injection of climate change concept for undergraduate curriculum: EU experience for Jordan and Syria "EGREEN, ERASMUS+-EU, 2016 (~EURO 1,000,000).
19. Developing an MSc Programme in Climate Change, Sustainable Agriculture and Food Security (CCSAFS)," ERASMUS+, EU, 2016 (~EURO 1,000,000).
20. Advance Materials for the Treatment of the Wastewater of the Textile Industry in the Mediterranean Basin (TREAT-MED), ERANETMED, 2016 (~EURO 900,000).
21. Anywhere Water Desalination Plant to Improve Human Development, ERANETMED, 2016 (~EURO 900,000).
22. Women's Engineering Participation in the US: What can the US Learn from Women's Decisions to Pursue Engineering in Diverse Predominantly Muslim Settings?, NSF, 2016 (~\$ 600,000).
23. Assessment of the Socio-Economic Impact of Transboundary Animal Diseases (TADS) on Livestock Sector in Jordan, FAO, 2016 (~\$ 90,000)
24. Innovators in the making, USAID, fhi360 program project," 2016, (~\$ 100,000)
25. Promotion of Innovation Culture in the Higher Education in Jordan (INVENT), ERASMUS+-EU, 2015 (~EURO 900,000).
26. Vocational training center for undergraduate university students and teachers in Jordan (VTC), ERASMUS+-EU, 2015 (~EURO 1,000,000).
27. Improving Higher Education Quality in Jordan and Palestine using Mobile Technologies for Better Integration of Disadvantaged Groups to Socio-economic Diversity - mEQUITY, ERASMUS+-EU, 2015 (~EURO 1,000,000).
28. Agreement Developing skills in the field of integrated energy planning in Med landscapes ENEPLAN, ERASMUS+-EU, 2015 (~EURO 1,000,000).
29. Modernization of Teaching Methodologies in Higher Education: EU experience for Jordan and Palestinian Territory, (METHODS), ERASMUS+-EU, 2015 (~EURO 1,000,000).
30. Smart Control Systems for Energy Management: New Master Degree (SEM-SEM), ERASMUS+-EU, 2015 (~EURO 1,000,000).
31. Cross-border NETwork to foster Knowledge-intensive business Incubation and TEchnology transfer (NET KITE), ENPI-EU, 2014 (~EURO 2,000,000).
32. Tuning Middle East and Africa (T-MEDA), TEMPUS-EU, 2014 (~EURO 1,500,000).

33. EU-EG-JO Joint Master Programme in Intelligent Transport Systems TEMPUS-EU, 2013- (~EURO 1,000,000).
34. Modernizing Undergraduate Renewable Energy Education: EU Experience for Jordan, MUREE TEMPUS-EU, 2013- (~EURO 1,150,000).
35. Master on Sustainable Development and Renewable Energy, TEMPUS-EU, 2010-2013 (EURO 1,200,000).
36. De-Pollution of the Mediterranean, ENPI/2009/226-459
37. Thermochemical Energy Storage for Solar Thermal Industrial Applications. JUST, 2015-2017 (~ JD6,000).
38. Thermal Runaway Prevention Using Phase Change Materials Composite for Li-Ion Batteries. JUST, 2015-2017 (~ JD5,000)
39. Deploying Solar Thermal Energy for Industrial Processes in Jordan JUST, 2015-2017 (~ JD5,000)
40. Impact of climate change on animal health in Jordan. JUST, June 20, 2011-June, 20, 2012 (JD 3,000)
41. Characterization, and Biosorption Properties of poly(N-vinylimidazole) grafted alginic acid and poly(acrylic acid) grafted alginic acid, JUST, August 2011-August 2012 (JD 6,300).
42. Synthesis, Characterization, and Biosorption Properties of Grafted Poly (methacrylamide) Algae, JUST, March 2011-March 2013 (JD 10,000).
43. Comparison of Different algae Immobilization Techniques for Water Pollutants Removal, JUST, July 2010-July 2012 (JD 7,000)
44. Design and Construction of a Volumetric Vapor-Phase Adsorption Apparatus for Investigating the Separation of UAE Petroleum Products on Local Adsorbents, Jan. 2005-Feb. 2006 (DH 30,000).
45. Removal of Nitrite from Dairy Wastewater by Adsorption on Locally Prepared Adsorbents, UAEU, Jan 2004-2006. (DH 30,000)
46. Removal of Heavy Metals by Adsorption on Immobilized Algal Cells, JUST, 2002-2003. (JD 1900)
47. Competitive Biosorption of Copper, Lead and Zinc from Simulated Wastewater, UAEU, Jan 2002-Dec. 2002. (DH 30,000)
48. Nitrification: Biofilm or Particle Immobilized Cells? UAEU, Jan 2002-Dec. 2002. (DH 30,000)
49. Adsorption of Heavy Metals on Activated Carbon Made from Date Pits, UAEU, Jan. 2002-Dec. 2002. (DH 30,000)
50. Repeated Removal of Heavy Metals by Adsorption on Immobilized Algal Biomass, UAEU, Jan. 2002-Dec. 2002. (DH 30,000)
51. Experimental and Theoretical Study of Multicomponent Ion Exchange Fluidized Bed, JUST, 2000-2004. (JD 2400)
52. Experimental and Theoretical Study of Separation of Selected Alcohol-Water Mixtures by Molecular Sieves, JUST, 2000-2003. (JD 6,000)
53. Optimal Design and Controllability Assessment of Network Heat Exchanger Synthesis, JUST, 2001-2003. (JD 3000)

54. Technical Evaluation of Solid Animal Wastes (manure) as Adsorbents, JUST, 2001-2002. (1,500)
55. Effects Inorganic Salts on the Vapor-Liquid Equilibrium of Selected Close-Boiling Point Binary Systems, JUST, 1999- 2000. (JD 2,000)
56. Investigation of the Effects of Pressure and Inorganic Salts on the Vapor- Liquid Equilibrium of Industrially Important Binary Systems, JUST, 1999- 2000. (JD 1,800)

Publications

Books

1. Abu Al-Rub, F., Shihab, P., Abu Al-Rub, S., Pittia, P. June 2020. Design and Construction of Food Premises: ISBN: 978-1-951814-04-5, DOI: 10.29011/978-1-951814-04-5-004. **GAVIN eBooks, USA.**
2. Abu Al-Rub, F., Shihab, P., Abu Al-Rub, S. June 2020. Quality Management Systems (ISO 9001:2015): ISBN: 978-1-951814-01-4, DOI: 10.29011/978-1-951814-01-4-002. **GAVIN eBooks, USA.**
3. Abu Al-Rub, F., Shihab, P., Abu Al-Rub, S., Baptista, P. June 2020. Food Safety Management Systems: ISBN: 978-1-951814-02-1, DOI: 10.29011/978-1-951814-02-1-003. **GAVIN eBooks, USA.**
4. Abu Al-Rub, F., Shihab, P., Abu Al-Rub, S. June 2020. Quality Management Tools: ISBN: 978-1-951814-00-7, DOI: 10.29011/978-1-951814-00-7-001. **GAVIN eBooks, USA.**
5. Abu Al-Rub, F., Shihab, P., Abu Al-Rub, S., Pittia, P., Antonello, P. June 2020. Food Safety Hazards: ISBN: 978-1-951814-03-8, DOI: 10.29011/978-1-951814-03-8-005. **GAVIN eBooks, USA.**
6. Abu Al-Rub, F., Shihab, P., Abu Al-Rub, S. June 2020. Cleaning and Disinfection: ISBN: 978-1-951814-05-2, DOI: 10.29011/978-1-951814-05-2-006. **GAVIN eBooks, USA.**
7. Abu Al-Rub, F.A., Fares, M., Kandah, M. 2017. Toxicity of Copper and Remediation Approaches. Chapter in Handbook of Metal-Microbe Interactions and Bioremediation: ISBN 9781498762427 - CAT# K28898. CRC Press.
8. Abu Al-Rub, F. A., Kiwan, S., Khasawneh, Q., Emtairah, T. 2014. Jordan Current Status on Renewable Energy and Energy Efficiency: Analysis and Recommendations for Curricula Development. in ICREGA'14-Renewable Energy: Generation and Applications: ISBN 978-3-319-05708-8, Springer, pp 525-535.
9. Obeidat, M. M., Awawdeh, M., Abu Al-Rub, F. 2011. An Innovative Nitrate Pollution Index and Multivariate Statistical Investigations of Groundwater Chemical Quality of Umm Rijam Aquifer (B4), North Yarmouk River Basin, Jordan. Chapter in Water Quality: ISBN 979-953-307-638-5. **INTECH Open Access Publisher.**

Journals

10. Abu Al-Rub, F.A., Fares, M.M, Mohammed, A.R. 2020. Pharmaceutical Nanohybrid Nanocarriers in Water Treatment; Entire Elimination of Ranitidine Drug, The Royal Society of Chemistry, Accepted.
11. Ali. H. H., 10. Abu Al-Rub, F.A., Shboul, B., Mumani, H. 2020. Evaluation of near-net-zero-energy building (nNZEB) strategies: a case study on residential buildings in Jordan. International Journal of Energy Economics and Policy. Accepted.

12. Fares, M.M, Abu Al-Rub, F.A., Mohammed, A.R. 2020. Ultimate Eradication of the Ciprofloxacin Antibiotic from the Ecosystem by Nanohybrid GO/O-CNTs, *ACS omega* 5 (9), 4457-4468
13. Fares, M.M, Abu Al-Rub, F.A, Talafha, T. 2020. Diblock Sodium Alginate Grafted Poly (N-vinylimidazole) in blank copolymeric beads and immobilized algal beads for water treatment. *Chemical Engineering Research and Design* 153, 603-612
14. Abu Al-Rub, F., Fares, M., Talafha, T. 2017. Poly (Acrylic Acid) Grafted Sodium Alginate Di-Block Hydrogels as Efficient Biosorbents; Structure-Property Relevance. *Journal of Polymers and the Environment*, pp 1-13.
15. Allaboun, H., Abu Al-Rub, F.A. 2016. Removal of 4-Chlorophenol from Contaminated Water Using Activated Carbon from Dried Date Pits: Equilibrium, Kinetics, and Thermodynamics Analyses. *Materials*, Vol. 9 (4), 251, pp 1-15.
16. Allaboun, H., Fares, M. M., Abu Al-Rub, F. A. 2016. Removal of Uranium and Associated Contaminants from Aqueous Solutions Using Functional Carbon Nanotubes-Sodium Alginate Conjugates, *Minerals*, 6 (1),
17. Fares, M. M., Abu Al-Rub, F. A., Masadeh, K. 2015. Lightweight MWCNTs-g-PAN Carbon Fibers; Sensitive high Absorptivity and Novel Wide-Bandgap Conjugated Polymers. *Industrial & Engineering Chemistry Research*. 54 (37), pp 9064-9071.
18. Al-Otoom, A., Abu Al-Rub, F., Mousa, H., Shadeed, M. 2015. Semi Continuous Solar Drying of Sludge from a Waste Water Treatment Plant. *J. Renewable Sustainable Energy*, 7, 043137, 2015. <http://dx.doi.org/10.1063/1.4928860>.
19. Fares, M. M., Abu Al-Rub, F. A., Kandah, M., Allaboun, H. 2013. Environmentally friendly copolymeric beads of *Chlorella vulgaris* and poly (Methacrylamide) Grafted Aliginic Acid Di-Block Copolymers for Biosorption of Zinc Ions, *Polymer International*, Vol. 62, pp 1179-1186.
20. Obeidat, M. M., Awawdeh, M., Abu Al-Rub F. 2013. Multivariate Statistical Analysis and Environmental Isotopes of Amman/Wadi Sir (B2/A7) Groundwater, Yarmouk River Basin, Jordan, *Hydrological Processes*, Vol. 27, pp 2449-2461.
21. Al-Otoom, A., Allawzi, M., Ajlouni, A., Abu Al-Rub, F., Kandah, M. 2012. The use of oil shale ash in the production of biodiesel from waste vegetable oil, *J. Renewable and Sustainable Energy*, Vol. 4, pp. 063123-1-063123-10
22. Abu Al-Rub, F. A., Hamdi, J., Hamdi, N., Allaboun, H., Abdulkareem, M., Al-Sharyani, M. 2011. Adsorption of Phenol on Different Activated Carbons Prepared from Date Pits. *Sep. Sci. Technol.* Vol. 46, pp. 300-308.
23. Kandah, M.I., Al-Rub, F.A.A., Bawarish, L., Bawarish, M., Al-Tamimi, H., Khalil, R., Sa'ada, R. 2010. Adsorption of cadmium onto Activated and Non-activated Date Pits. *Proceedings of World Academy of Science, Engineering and Technology*, Volume 62, February 2010, Pages 204-208.
24. Hamdi, N., Abu Al-Rub, F. A., Hamdi, J., Allaboun, H. 2010. Decontamination of Cu²⁺-Tainted Water through Biosorption onto Palm Tree Leaf Particles. *Jordan Journal of Civil Engineering*. Vol. 4 No. 3, pp. 222-230.
25. Ashour, I, Abu Al-Rub, F.A, Sheikha, D., Volesky, B. 2008. Biosorption of Naphthalene from Refinery Simulated Waste-Water on Blank Alginate Beads and Immobilized Dead Algal Cells. *Sep. Sci. Technol.* Vol. 43, pp. 2208-2224.

26. Sheikha, D., Ashour, I, Abu Al-Rub, F.A., 2008. Biosorption of Zinc on Immobilized Green Algae: Equilibrium and Dynamics Studies. *The Journal of Engineering Research*. Vol. 5, pp. 20-29.
27. Allaboun, H., Abu Al-Rub, F. A. 2008. Dynamics, Mechanistic, and Equilibrium Studies for the Biosorption of Nickel on Palm Tree Leaves. *Jordan Journal of Civil Engineering*. Vol. 2, pp. 124-138.
28. El-Naas, M. H., Abu Al-Rub, F. A., Ashour, I, and Al Marzouqi, M, 2007. Effect of Competitive Interference on the biosorption of Lead (II) by *Chlorella vulgaris*. *Chem. Eng. Processing: Process Intensification*, Volume 46 (12) pp. 1391-139.
29. Al-Muhtaseb, S. A., Abu Al-Rub, F. A., and Al Zarooni, M., 2007. Adsorption Equilibria of Nitrogen, Methane and Ethane on BDH Activated Carbon," *J. Chem. Eng. Data*. Vol. 52, pp. 60-65.
30. Abu Al-Rub, F. A., "Biosorption of Zinc on Palm Tree Leaves: Equilibrium, Kinetics, and Thermodynamics Studies, 2006. *Sep. Sci. Technol.*, Vol. 41, pp. 3499-3515.
31. Abu Al-Rub, F. A., El-Naas, M. H., Ashour, I, and Al Marzouqi, M, 2006. Biosorption of Copper on *Chlorella vulgaris* from Single, Binary and Ternary Metal Aqueous Solutions. *Proc. Biochem.*, Vol. 41, pp. 457-464.
32. Abu Al-Rub, F. A., El-Naas, M. H., Benyahia, F. and Ashour, I, 2004. Biosorption of Nickel on Blank Alginate Beads, Free and Immobilized Algal Cells. *Proc. Biochem.*, Vol. 39, pp 1767-1773.
33. Mousa, H, Kandah, M., and Abu Al-Rub. F. A., 2004. Removal of Copper, Lead and Cadmium Ions in a Fluidized Bed. *Sep. Sci. Technol.*, Vol. 39, pp. 1751-1760.
34. Abu Al-Rub, F. A., 2004. Sorption of Lead Ions from Simulated Industrial Wastewater onto Jordanian Low-Grade Phosphate. *Ads. Sci. Technol.*, Vol. 22, pp 165-179.
35. Abdulkarim, M., and Abu Al-Rub, F. A., 2004. Adsorption of Lead Ions from Aqueous Solutions on Activated Carbon and Chemically-Modified Activated Carbon Prepared from Date Pits. *Ads. Sci. Technol.*, Vol. 22, pp 119-134.
36. Abu Al-Rub, F. A., Banat, F. and, Beni-Melhem, K., 2003. Sensitivity Analysis of Air Gap Membrane Distillation. *Sep. Sci. Technol.*, Vol. 37, pp. 3645-3667.
37. Banat, F. Abu Al-Rub, F. A., and, Beni-Melhem, K., 2003. Desalination by Vacuum Membrane Distillation: Sensitivity Analysis. *Sep. Purif. Technol.*, Vol. 33, pp. 75-87.
38. Kandah, M., Abu Al-Rub, F. A., and Al-Dabaybeh, N., 2003. The Aqueous Adsorption of Copper and Cadmium Ions on Sheep Manure. *Ads. Sci. Technol.*, Vol. 21, pp. 501-509.
39. Abu Al-Rub, F. A., Kandah, M., and Al-Dabaybeh, N., 2003. Competitive Adsorption of Nickel and Cadmium on Sheep Manure Wastes: Experimental and Prediction Studies. *Sep. Sci. Technol.*, Vol. 38, pp. 483-497.
40. Abu Al-Rub, F., 2002. Prediction of Vapor-Liquid Equilibrium Inside Capillary Porous Plates. *Chem. Eng. Technol.*, Vol. 25, pp. 1171-1175.
41. Kandah, M., Abu Al-Rub, F. A., and Al-Dabaybeh, N., 2002. Competitive Adsorption of Copper-Nickel and Copper-Cadmium Binaries on Sheep Manure Waste. *Eng. Life Sci.*, Vol. 8, pp. 237-243.

42. Abu Al-Rub, F. A., Banat, F. and, Beni-Melhem, K., 2002. Parametric Sensitivity Analysis of Direct Contact Membrane Distillation. *Sep. Sci. Technol.*, Vol. 37, pp. 3245-3271.
43. Abu Al-Rub, F. A., Kandah, M., and Al-Dabaybeh, N., 2002. Nickel Removal from Aqueous Solutions Using Sheep Manure Wastes. *Eng. Life Sci.*, Vol. 2, pp. 111-116.
44. Abu Al-Rub, F. A., Abdel-Jabbar, N., Darwish, N., and Ghanem, H., 2002. Vapor-Liquid Equilibrium Data for the 2-Methoxy-2-methylpropane (MTBE)- Ethanol, MTBE-Ethanol-Calcium Chloride and MTBE-ethanol-Copper Chloride. *Sep. Sci. Technol.*, Vol. 37, pp. 1911-1926.
45. Abu Al-Rub, F. A., Abdel-Jabbar, N., Darwish, N., and Ghanem, H., 2002. Vapor-Liquid Equilibrium of MTBE-Methanol, MTBE-Methanol-Calcium Chloride and MTBE-Methanol-Lithium Chloride Mixtures. *Chem. Eng. Technol.*, Vol. 25, pp. 729-733.
46. Abu Al-Rub, F. A., and Datta, R., 2002. Vapor-Liquid Equilibrium Data for Methyl Tert-Butyl ether- Ethanol Mixtures at 90.0 and 101.3 kPa. *Sep. Sci. Technol.*, Vol. 37, pp. 229-243.
47. Abu Al-Rub, F. A., and Datta, R., 2001. Isobaric Vapor-Liquid Equilibria of Water-Pyridine and Water-Pyridine-Calcium Chloride Mixtures. *Chemical Engineering Journal*, Vol. 81, pp. 83-89.
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