

Curriculum Vitae

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Biographical Sketch

Prof. Fahmi Abu Al-Rub is a professor of chemical and biochemical engineering at Jordan University of Science and Technology (JUST) and an Accreditation Consultant at JUST and at the University of Jordan (JU). He was the Dean of Research at the Jordan University of Science & Technology (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 during 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 will be hosted by three European Universities. This is was part of ENPI/2009/226-459 Project. He is a partner in five EU projects with a budget exceeding 6.75 M€; Four TEMPS Projects and one ENPI project. The TEMPUS projects are: one on tuning Middle East and Africa (T-MEDA) with a total budget of about 1.5 M€, one to establish a master program in Intelligent Transport Systems (ITS) in Jordan and Egypt with a total budget of about 1.0 M€, two projects on Renewable Energy; one is to establish a master program in Sustainability and Renewable Energy in Jordan with a total budget of about 1.1 M€, and another on modernizing Renewable Energy Curriculum using EU experience with a total budget of about 1.15 M€. The ENPI project "Cross-border NETwork to foster Knowledge-intensive business Incubation and TEchnology transfer (NET KITE)" with a budget of about 2.0 M€ is to promote innovation among young researchers. He is also a monitoring manager for three ENPI projects with a budget exceeding 6.0 M€. He is supervising the preparation and application of both JUST and JU for ABET accreditation in Engineering and ICT. He is 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 is 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. He was an ABET consultant for Hashemite University

during 2007-2009. Prof. 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 And 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 is/was member of the Editorial Board of the International Journal of General Engineering and Technology (IJGET), member of the Editorial Board of 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: 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, 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 75 papers in peer reviewed top international journals and proceedings of national, regional, and international scientific conference. Prof. Abu Al-Rub supervised the undergraduate final projects of more than 70 students, the M.Sc theses of 10 students and acted as external examiner for many M.Sc theses in Jordan and UAEU. He has completed more than 20 funded projects by UAU University and JUST and conducted many consultations.

Prof. Abu Al-Rub is a peer reviewer of numerous top international journals, such as *J. Porous Media*, *Proc. Biochem., Sep. Sci. & Technol.*, *J. Hazar. 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.* Prof. Abu Al-Rub contributed to the establishment and/or development of many academic units and programs. He is leading the university effort to enhance and promote research. He is leading the university effort to secure external funds. He directed, supervised, and coordinated with all Engineering programs at JUST to apply for ABET. He supervised revising the curriculum of all Engineering programs. He worked with the Architecture Department at JUST to be the first University outside the US to have the NAAP.

Personal Information

Date of Birth: October 24, 1963
Place of Birth: Jalboun
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 Trustees, Philadelphia University 2009-2013
- Board member of Yarmouk University Research Council 2011-Present
- 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

The University of Jordan Accreditation Consultant	2013-Present
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 Assistant Professor	Jan. 95- Jan. 2000
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, Postdoc. Assoc.	Aug. 94-Dec. 94
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, Philadelphia University

- 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.

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 is 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

- 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, ST, 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 Recent Patents on Chemical Engineering
- Member of the Canadian Society for Chemical Engineering (CSChE), Canada.
- Member of the Canadian Society for Chemical Technology (CSCT), Canada.
- Member of the Canadian Society for Chemistry (CSC), Canada.
- Member of the International Union of Pure and Applied Chemistry, Canada.
- Member of the Chemical Institute of Canada, Canada.
- Member of the Editorial Board of the Research Journal of Chemistry and Environment.
- Member of member of the Editorial Board of the International Journal of General Engineering and Technology (IJGET).
- Member of member of the Editorial Board of the Recent Patents on Chemical Engineering.
- 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. 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).

2. 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).
3. 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).
4. 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).
5. 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 and UAEU:
 1. Al-Talafha, T.M., "Characterization, and Biosorption Properties of poly(N-vinylimidazole) grafted alginic acid and poly(acrylic acid) grafted alginic acid," 2013.
 2. AL-Sharyani, M., "Removal of Heavy Metals from Aqueous Solutions Using Local Adsorbents," Dec. 2005.
 3. Chaika, D., "Biosorption of priority pollutants of petroleum refinery wastewater," (co-advisor), May 2005.
 4. Abu Dyak, K., "Optimal Design and Controllability Assessment of Network Heat Exchanger Synthesis," (co-advisor) June, 2001.
 5. Aldabaybah, N., "Technical Evaluation of Solid Animal Wastes as Adsorbents," (co-advisor) June, 2001.
 6. Al-Refae, I., "Effects Inorganic Salts on the Vapor-Liquid Equilibrium of Selected Close-Boiling Point Binary Systems," June, 2000.
 7. Ghanim, H., "Investigation of the Effects of Pressure and Inorganic Salts on the Vapor- Liquid Equilibrium of Industrially Important Binary Systems," June, 2000.
 8. Bani-Melhem, K. Q., "Sensitivity Analysis of Membrane Distillation Process," May, 1998.
 9. Al-Ananzeh, N. M., "Extractive Distillation Using Hydrotropes," Aug. 1998.
 10. 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-Present
- 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-Present
- 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. Cross-border NETwork to foster Knowledge-intensive business Incubation and TEchnology transfer (NET KITE), ENPI-EU, 2014 (~EURO 2,000,000).
2. Tuning Middle East and Africa (T-MEDA), TEMPUS-EU, 2014 (~EURO 1,500,000).
3. EU-EG-JO Joint Master Programme in Intelligent Transport Systems TEMPUS-EU, 2013- (~EURO 1,000,000).
4. Modernizing Undergraduate Renewable Energy Education: EU Experience for Jordan, MUREE TEMPUS-EU, 2013- (~EURO 1,15,000).
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