Dr. Ziad Abu El-Rub | Curriculum Vitae

PERSONAL INFORMATION

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CAREER SUMMARY

Associate Professor in Chemical Engineering with extensive experience in academia and industry. Holds a Ph.D. in Chemical Engineering from the University of Twente and a Master of Technological Design from the same institution. Currently serving as an Associate Professor at the American University of the Middle East and the German Jordanian University. Has held several academic and administrative positions including Acting Department Head and Dean Assistant for Industrial Relations. Has a proven track record in conducting scholarly research, publishing numerous papers, winning grants, and teaching. Has also held several industrial positions such as Regional Manager for the Middle East and North Africa, Business Development Manager, and Quality Control Manager. Holds a license as a Consultant Engineer in Chemical Engineering. Has received numerous honors and recognition for academic and professional excellence.

EDUCATION

2008	Ph.D. in Chemical Engineering Thermal Engineering Laboratory, University of Twente, Enschede, the Netherlands Dissertation: Biomass char as an in-situ catalyst for tar removal in gasification systems Supervisor: Prof. Gerrit Brem
2002	Master of Technological Design Process Development Department, University of Twente, Enschede, the Netherlands Thesis: High-temperature catalytic tar removal from producer gas of biomass-fueled gasifiers
2000	M.Sc. courses in Chemical Engineering Chemical Engineering, Chemical Engineering Department, University of Jordan, Amman, Jordan, GPA: 3.86 /4.00 (Rank: 1st)
1998	B.Sc. in Chemical Engineering Chemical Engineering Department University of Jordan, Amman, Jordan Thesis: Plant design for biogas production from Amman's municipal solid waste, GPA: 3.48 /4.00 (Rank: 3rd)

EXPERIENCE

9/2022-Present	**Associate Professor,** Chemical Engineering Department, American University of the Middle East (AMU), Kuwait. • Conducted scholarly research, teaching, advising, and administrative work. • Head of chemical engineering labs committee • Head of Green Energy Club
11/2021-Present	**Associate Professor,** Pharmaceutical and Chemical Engineering Department, German Jordanian University, Amman, Jordan.

10/2020-8/2022 **Acting Department Head,** Pharmaceutical and Chemical Engineering Department, German Jordanian University, Amman, Jordan.

- Establishing MSc program in Pharmaceutical and Chemical Engineering to start in 2022/2023
- Establishing Dual Study track in BSc in Pharmaceutical and Chemical Engineering to start in summer semester of 2021/2022
- ASIIN accreditation application for the BSc program in Pharmaceutical and Chemical Engineering

6/2020-8/2020 **Train the Trainer,** Pharmaceutical and Chemical Engineering Department, Beuth Hochschule für Technik Berlin, Germany

- Teaching Chemical Engineering Reaction

12/2016-09/2020 **Dean Assistant for Industrial Relations**, Schools of Applied Medical Sciences, German Jordanian University, Amman, Jordan.

- Chaired GJU Industrial Relations Committee
- Developed cooperation agreements with the industrial partners that include training, co-teaching, co-supervision, workshops, and funding.

10/2012-11/2021 **Assistant Professor,** Pharmaceutical and Chemical Engineering Department, German Jordanian University, Amman, Jordan.

- Conducted scholarly research, teaching, advising, and administrative work.
- Published numerous papers in refereed periodicals
- Winning more than USD1 million in grants.

2/2011 – 7/2012 **Regional Manager for the Middle East and North Africa**, ASCOM Separation Company, Arnhem, the Netherlands.

- Oversaw the development of process design and technical sales of ASCOM's separation technologies in the MENA region that resulted in meeting target sales.
- Designed and qualified advanced separation equipment of crude oil, water, gas, and sand.

2/2007 – 11/ 2010 **Business Development Manager**, Petrolink Holding Company, Kuwait

- Managed a project for establishing a US$120mn large-scale polyethylene terephthalate (PET) plant in Kuwait that resulted in the successful submission of all technical studies.
- Worked closely with investment companies and technology developers that resulted in market assessment, technical, and commercial viability of different energy and petrochemical projects.

8/1998 – 10/1999 **Quality Control Manager**, National Paints Factories, Amman, Jordan

- Managed the quality control labs of the finished products and raw materials.

LICENSES AND CERTIFICATION

2018 Consultant Engineer (JCE) in Chemical Engineering
Jordan Higher Council for Professional Qualifications and Accreditation,
Jordan Engineers Association, Amman, Jordan

2015 Professional Engineer (JPE) in Bioenergy Engineering
Jordan Higher Council for Professional Qualifications and Accreditation,
Jordan Engineers Association, Amman, Jordan

HONORS AND RECOGNITION

2019	Distinguished Industrial Professor Award of excellence for the academic year 2018/2019, German Jordanian University.
2018	Best presentation award at the 2018 3rd International Conference on New Energy and Applications (ICNEA 2018), 2-4 Nov. 2018, Singapore.
2017	Second Prize in Industrial Graduation projects competition 2017 – Chemical Engineering, organized by the Jordan Engineers Association and Amman Chamber of Industry, Jordan.
2017	Certificate of excellence for distinguished academic performance for the year 2016/2017, German Jordanian University.
2016	First Prize –Graduation projects competition 2016 – Chemical Engineering, organized by the Jordan Engineers Association and Amman Chamber of Industry, Jordan.
2016	USD 100,000 fund for the Research project: Elimination of Tar produced from biomass gasification using Jordanian low-cost mineral catalysts, German Jordanian University.
2016	Certificate of excellence for distinguished academic performance for the year 2015/2016, German Jordanian University.
2015	USD 783,000 fund for Erasmus+ project: Vocational training Center for undergraduate university students and teachers in Jordan.
2013-2016	Industrial experience allowance award, German Jordanian University.
1998-2000	Teaching Research Assistant Scholarship, MSc Chemical Engineering, Chemical Engineering Department, University of Jordan (1998-2000).
1997	University of Jordan Summer Training scholarship, Larissa, Greece (1997).
1994-1998	Honor List, College of Engineering, University of Jordan (1994-1998).
1993-1998	BSc Royal Scholarship, Chemical Engineering Department, University of Jordan (1993-1998).

TEACHING EXPERIENCE

9/2022-Present — **American University of the Middle East (AMU)**, Department of Chemical Engineering:

1. Chemical Reaction Engineering
2. Chemical Engineering Lab (Aspen Hysys Simulation)
3. Design and Analysis of Processing Systems
4. Transforming Ideas to Innovation I

12/2012-8/2022 — **German Jordanian University**, Department of Pharmaceutical and Chemical Engineering:

1- Chemical Reaction Engineering
2- Fluid, Heat and Reaction Engineering Lab
3- Pharmaceutical Plant Design
4- Industrial Processes Management
5- Chemical Engineering Economics
6- Fluid Mechanics for Chemical and Medical Engineers
7- Introduction to Pharmaceutical and Chemical Engineering
8- Principles of Chemical Engineering
9- Graduation Project I

10- Graduation Project II
11- General Chemistry
12- General Chemistry Lab
13- Separation Processes Lab
14- Shale Oil Production Processes
15- Introduction to Oil and Gas Production
16- Technical Writing

UNIVERSITY SERVICE

02/2023 - Present	Head of Labs Committee, Chemical Engineering Department, AUM
02/2023 - Present	Head of Green Energy Club, AUM.
10/2021-present	Study plan committee for updating the BSC program of pharmaceutical and chemical engineering at GJU.
10/2020-present	Committee for establishing MSc program in pharmaceutical and chemical engineering at GJU.
12/2018-02/2021	Head of General Safety Committee at the School of Applied Medical Sciences
10/2015-10/2018	GJU Coordinator of VTC Erasmus+ Project
5/2016-03/2021	Head of GJU Industrial Relations Committee
12/2014-present	Liaison officer with GJU Training Center
2014-2015	Faculty of Applied Medical Sciences Council
2014-10/2020	Graduation Projects Coordinator
2013-1014	German Jordanian University Council
2013-2014	Laboratory and Tenders Committee
2013-2014	Furnishing Laboratories Committee
2013-2014	Quality and accreditation committee
2f013-2014	Study plan committee
2013-2014	Scientific research committee
2013-2014	Faculty recruitment committee

PROFESSIONAL ACTIVITIES

2023	Member of the International Advisory Board, the 3rd BAU international oil shale conference (BAU-OSC-3), 17 – 19 October 2023, Amman, Jordan.
2021	Member of the technical program committee of the 5th International Conference on New Energy and Applications (ICNEA 2021), 4-6 Nov. 2021 in Thailand
2021	Vice-Chairman of the Preparatory Committee of the 9th Jordan International Chemical Engineering (JIChEC09) Conference, 10-12 Oct. 2021 in Amman, Jordan
2018	Member of the technical program committee of the 3rd International Conference on New Energy and Applications (ICNEA 2018), 2-4 Nov. 2018 in Singapore
2018	Member of the organizing committee of the Second International Oil Shale Conference held on 9-11 Oct. 2018 in Amman, Jordan
5/2018 – Present	Board member of the Chemical Engineering Division for the period 2018-2021, Jordan Engineers Association, Amman, Jordan
8/2016 – 2/2017	Head of JEA Branches Committee for Workshops, Jordan Engineers Association, Amman, Jordan
4/2016 – present	Advisory board member of Engineering Training Center, Jordan Engineers Association, Amman, Jordan
5/2015 – 5/2018	Board member of the Chemical Engineering Division for the period 2015-2018, Jordan Engineers Association, Amman, Jordan
2014-2015	Member of the Chemical Engineering Graduation Projects Evaluation Committee, Jordan Engineers Association, Jordan
3/2014 – present	Member of the Advisory Board for the Chemical Engineering Department at Jordan University for Science and Technology, Irbid, Jordan
09/2013-11/2014	Vice President of the Preparatory Committee of the seventh Jordan International Chemical Engineering (JIChE 07) Conference, Amman, Jordan

21/11 /2013	Chair of the workshop "Oil Shale in Jordan: Reality, Potential, and Limitations" Jordan Engineers Association, Amman, Jordan
1/2013 – 5/2015	Head of Chemical Engineering Scientific Committee at Jordan Engineering Association, Amman, Jordan
27/2/-1/3/2012	Steering committee member, 2nd Annual 2012 Global Sand Management and Control Workshop, Dubai, UAE
24-28/10/2011	Steering committee member, 4th Annual 2011 Global Produced Water Management Workshop, Istanbul, Turkey

MEMBERSHIPS

2006-present	Jordan Engineers Association
2009	Society of Petroleum Engineers

JOURNAL REVIEWER

Industrial & Engineering Chemistry Research

Energy & Fuels

Fuel Processing Technology

Biofuels

Thermal Science and Engineering Progress

LANGUAGES

Arabic:	Mother language
English:	Fluent
Dutch:	Basic
German:	Basic

SKILLS

MS Office Applications:	Word, Excel, PowerPoint, Outlook, MS Visio, MS Project
Chemical Engineering Softwares:	ASPEN PLUS, ASPEN HYSYS

FUNDING

Project title:	Development of a Prototype System for the Conversion of Waste Cooking Oil into High-Quality Biodiesel Fuel (Accepted funding)
Supporting Authority:	American University of the Middle East, Kuwait
Role:	Principle Investigator
Grant:	USD 10,000
Duration:	24 months
Project title:	Setting up a Resilient, circular Mediterranean agro-ecosystem for Improved Sustainability (ReMedIS). (Accepted preliminary application, submitted detailed application)
Supporting Authority:	Scientific Research Support Fund - (PRIMA) Partnership for Research and Innovation in the Mediterranean Area
Role:	Co-Investigator
Grant:	USD 43,000
Duration:	24 months

Project title:	Olive Mills Wastewater Valorization and Treatment (Accepted preliminary application, submitted detailed application)
Supporting Authority:	Scientific Research Support Fund
Role:	Principal Investigator
Grant:	USD 140,000
Duration:	30 months
Project title:	Updating the curriculum of chemical engineering to reflect the new trends in chemical PROCESS industry/(CPI).
Supporting Authority:	ERASMUS+
Role:	Coordinator for the German Jordanian University
Grant:	Total Grant: USD 1,000,000
Duration:	Oct. 2021- Oct. 2024
Project title:	Elimination of Tar produced from biomass gasification using Jordanian low-cost mineral catalysts
Supporting Authority:	German Jordanian University
Role:	Principal Investigator
Grant:	USD 100,000
Duration:	2016-2019 (completed)
Project title:	Vocational training Center for undergraduate university students and teachers in Jordan
Supporting Authority:	ERASMUS+
Role:	Coordinator for the German Jordanian University
Grant:	Total Grant: USD 783,000
Duration:	Oct. 2015- Oct. 2018 (completed)
Project title:	Experimental & Economic Evaluation of a Designed Machine for Converting WCO into Biodiesel
Supporting Authority:	KADDB and KAFD
Role:	Supervisor on a BSc graduation project
Grant:	USD 7,000
Duration:	Feb 2015-Feb-2016 (Completed)
Project title:	Investigation of the effect of heating rates on the BET surface area of Jordanian minerals
Supporting Authority:	German Jordanian University
Role:	Supervisor on a BSc graduation project
Grant:	USD 700
Duration:	Jan 2017- Dec 2019 (completed)
Project title:	Kinetics of toluene dry reforming reaction using Jordanian zeolite as a catalyst
Supporting Authority:	German Jordanian University
Role:	Supervisor on a BSc graduation project
Grant:	USD 850
Duration:	Oct 2021- May 2022 (completed)

RESEARCH

Research Interests

1. Catalysis: Catalytic tar removal in biomass conversion processes

2.	Biomass energy conversion:	Thermochemical (pyrolysis, gasification) and biochemical (anaerobic digestion)
3.	Oil shale pyrolysis:	Characterization, kinetics and modeling
4.	Wastewater treatment:	Membrane distillation
5.	Renewable energies:	Phase change materials, solar chimney power plants, insulation materials

Research Advisees

Examiner – MSc Theses

1. Hamzeh Al-Omari, Olive mill wastewater treatment using membrane technology, Chemical Engineering Department, Jordan University of Science and Technology, 2019.
2. Fadi Alrawash, Treatment of olive mill wastewater using membrane distillation, Chemical Engineering Department, Jordan University of Science and Technology, 2019.

Supervisor - MSc Theses

(Note: Until October 2022, there was no MSc Program at the Department of Pharmaceutical and Chemical Engineering, GJU)

1. Mathijs Snippert, Characterization of biomass char as a catalyst for tar reduction in a fixed bed reactor, University of Twente, Thermal Engineering Laboratory, MSc Thesis, June 2004.
2. Jorke Jellema, Catalytic Tar Reduction from Biomass Gasification Gas using Wood Char as a Catalyst, University of Twente, Thermal Engineering Laboratory, MSc Thesis, July 2003.

PUBLICATIONS

Peer-reviewed Journals (>1,700 Google Scholar Citations)

1. Emad Abdelsalam, **Ziad Abu El-Rub**, Malek Alkasrawi, Dana Ibrahim, Ahmad Azzam, Tareq Salameh, Abdul Ghani. (2023). A Novel Design of a Twin-Chimney Solar Power Plant for Power and Distilled Water Production. Thermal Science and Engineering Progress. 46, 102231. https://doi.org/10.1016/J.TSEP.2023.102231.
2. **Ziad Abu El-Rub**, Dina Halawa, Iman Alqudah, Abdullah Nasr, Muhammad Naqvi. (2023). Natural zeolite catalyst for tar removal in biomass gasification Systems: Kinetics and effectiveness evaluation. Fuel. 346, 128393. https://doi.org/10.1016/j.fuel.2023.128393
3. **Ziad Abu El-Rub**, Rajwa Abu Hassan, Rami Alnajjar, Malek Alkasrawi. (2022). Kinetics of Natural Kaolinite as a Catalyst for Toluene Dry Reforming. Jordanian Journal of Engineering and Chemical Industries. 5(3), 71-77.
4. Samer Al-Gharabli, **Ziad Abu El-Rub**, Eyad M. Hamad, Wojciech Kujawski, Zuzanna Flancc, Katarzyna Pianka, Waldemar Jankowski, Joanna Kujawa. (2022). Toward anti-fouling properties and enhanced performance in separation process - carbon nanotubes - PVDF hybrids. Applied Surface Science. 602, 154341. https://doi.org/10.1016/j.apsusc.2022.154341.
5. Mohammad F. Khanfar, Taleen S. Kopti, Natalie O. Gharaibeh, and **Ziad Abu El-Rub**. (2021). Differential pulse voltammetry as an alternative method for tracking Hydrochlorothiazide electrolytic degradation. Jordanian Journal of Engineering and Chemical Industries. 4(3), 70-77. https://doi.org/10.48103/jjeci492021
6. Samer Al-Gharabli, **Ziad Abu El-Rub**, Eyad M.Hamad, Wojciech Kujawski, Zuzanna Flanc, Katarzyna Pianka and Joanna Kujawa. (2021). Surfaces with Adjustable Features—Effective and Durable Materials for Water Desalination. International Journal of Molecular Sciences. 22, 11743. https://doi.org/10.3390/ijms222111743

7. Eyad M. Hamad , Aseel Khaffaf, Omar Yasin, **Ziad Abu El-Rub**, Samer Al-Gharabli, Wael Al-Kouz, and Ali Chamkha. (2021). Review of nanofluids and their biomedical applications. Journal of Nanofluids. 10, 463–480. https://doi.org/10.1166/jon.2021.1806

8. Muhammad Tawalbeh, Amani Al-Othman, Tareq Salamaha, Malek Alkasrawi, Remston Martis, **Ziad Abu El-Rub**. (2021). A critical review on metal-based catalysts used in the pyrolysis of lignocellulosic biomass materials. Journal of Environmental Management. 299, 113597. https://doi.org/10.1016/j.jenvman.2021.113597

9. **Ziad Abu El-Rub**, Joanna Kujawa, Samer Al-Gharabli. (2020). Pyrolysis Kinetic Parameters of Omari Oil Shale using Thermogravimetric Analysis. Energies 13 (16), 1-13. https://doi.org/10.3390/en13164060

10. **Abu El-Rub, Z.** (2019). TGA and BET Characterization of Spent Oil Shale as a Catalyst in Biomass Tar Removal Applications. International Journal of Smart Grid and Clean Energy 2019, 8(6)680-687. https://doi.org/10.12720/sgce.8.6.680-687.

11. **Ziad Abu El-Rub**, Joanna Kujawa, Esra'a Albarahmiah, Nafisah Rifai, Fathieh Qaimari, Samer Al-Gharabli. (2019). High Throughput Screening and Characterization Methods of Jordanian Oil Shale as a Case Study. Energies 2019, 12(16), 3148. https://doi.org/10.3390/en12163148

12. **Ziad Abu El-Rub**, Eddy Bramer, Samer Al-Gharabli, and Gerrit Brem. (2019). Impact of char properties and reaction parameters on naphthalene conversion in a macro-TGA fixed char bed reactor. Catalysts 2019, 9, 307. https://doi.org/10.3390/catal9040307.

13. Samer Al-Gharabli, Eyad Hamad, Munib Saket, **Ziad Abu El-Rub**, Hassan Arafat, Wojciech Kujawski, and Joanna Kujawa. (2018). Advanced material - ordered nano-tubular ceramic membrane covalently capped with single wall carbon nanotubes. Materials 2018, 11(5), 739. https://doi.org/10.3390/ma11050739

14. Samer Al-Gharabli, Wojciech Kujawski, **Ziad Abu El-Rub**, Eyad M. Hamad, Joanna Kujawa. (2018). Enhancing membrane performance in removal of hazardous VOCs from water by modified fluorinated PVDF porous material. Journal of Membrane Science, 556, 214-226. http://dx.doi.org/10.1016/j.memsci.2018.04.012.

15. **Abu El-Rub, Z.,** Brem, G., & Bramer, E. A. (2015). Single Char Particle Model for Naphthalene Reduction in a Biomass Gasification System. Biomass and Bioenergy, 72, 19-27. http://dx.doi.org/10.1016/j.biombioe.2014.11.021.

16. **Abu El-Rub, Z.**, Bramer, E. A., & Brem, G. (2008). Experimental comparison of biomass chars with other catalysts for tar reduction. Fuel, 87(10–11), 2243-2252. http://dx.doi.org/10.1016/j.fuel.2008.01.004.

17. **Abu El-Rub, Z**., Bramer, E. A., & Brem, G. (2004). A Review of Catalysts for Tar Elimination in Biomass Gasification Processes. Ind. Eng. Chem. Res., 43, 6911-6919. http://dx.doi.org/10.1021/ie0498403.

Conference papers

18. **Abu El-Rub, Z.** (2018). Characterization of a spent-oil shale as a catalyst for tar removal. In: 2018 3rd International Conference on New Energy and Applications (ICNEA 2018), Singapore

19. **Abu El-Rub, Z.**, Kähler, B., Al-Khatib, J. (2017). University-Industry Collaboration: A Case Study from the German Jordanian University. In: 3rd MENA Higher Education Leadership Forum, Dubai, UAE.

20. Taftanazi, Y., Neumann, H., Burger, D., Hagelstein, G., **Abu El-Rub, Z**., Gschwander, S. (2017), Stability study of Phase Change Material between 100 °C and 200 °C. Paper presented at the 8th Jordan International Chemical Engineering Conference, Amman, Jordan.

21. **Abu El-Rub, Z.**, Brem, G., Bramer, E.A. (2016). Parameters affecting the removal of naphthalene over fixed biomass char bed. In: Venice 2016, Sixth International Symposium on Energy from Biomass and Waste, CISA, Venice, Italy. (ISBN 978-88-6265-009-0).

22. **Abu El-Rub, Z**., Bramer, E. A., & Brem, G. (2016). Naphthalene Removal Experiments over a Fixed Bed of Biomass Char. Paper presented at the 5th Global Conference on Renewables and Energy Efficiency for Desert Regions (GCREEDER 2016), Amman, Jordan. http://conferences.ju.edu.jo/sites/gcreeder/gcreeder2016/Pages/Home.aspx

23. **Abu El-Rub, Z**., Bramer, E. A., & Brem, G. (2015). Real Tar Removal over Fixed Bed of Biomass Char. Paper presented at the 23rd European Biomass Conference and Exhibition, Vienna, Austria.

24. **Abu El-Rub, Z.**, Bramer, E. A., & Brem, G. (2014). Formulation of a Single Char Particle Model for naphthalene Removal in Biomass Gasification. Paper presented at the 7th Jordan International Chemical Engineering (JIChE 07) Conference, Amman, Jordan.

25. Al-Gharabli, S. I., **Abu El-Rub, Z.**, & Khanfar, M. F. (2014). High Throughput Screening of Oil Content in Jordanian Oil Shale Using ATR-FTIR and Refractive Index Techniques. Paper presented at the 7th Jordan International Chemical Engineering (JIChE 07) Conference, Amman, Jordan.

26. **Abu El-Rub, Z.**, Bramer, E. A., & Brem, G. (2004, 30 Aug to 2 Sep). Modeling of Tar Reduction in Biomass Gasification Using Biomass Char as a Catalyst. Paper presented at the Science in Thermal and Chemical Biomass Conversion, Victoria, Vancouver Island, BC, Canada.

27. **Abu El-Rub, Z.**, Bramer, E. A., & Brem, G. (2004, 10-14 May). Tar Reduction in Biomass Gasification Using Biomass Char as a Catalyst. Paper presented at the Proceeding of Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection, Rome.

28. **Abu El-Rub, Z.**, Bramer, E. A., & Brem, G. (2003, 2 September - 5 September). Tar Removal in Fixed Bed with Application to Biomass Gasification. Paper presented at the International Nordic Bioenergy 2003 Conference, Proceeding of an Expert Meeting, Jyvaskyla, Finland.

29. **Abu El-Rub, Z.**, Bramer, E. A., & Brem, G. (2002, 17-21 June). Removal of Naphthalene as the Model Tar Compound on Calcined Dolomites, Olivine and Commercial Nickel Catalyst in a Fixed Bed Tubular Reactor. Paper presented at the 21st European Conference for Energy, Industry and Climate Protection, Amsterdam, The Netherlands.

30. **Abu El-Rub, Z**., Bramer, E. A., & Brem, G. (2002, 30 September - 1 October 2002). Tar Removal in an Entrained Flow Cracker (EFC) with Application to Biomass Gasification. Paper presented at the Pyrolysis and Gasification of Biomass and Waste, Strasbourg, France.

Conference Presentations

- **Abu El-Rub, Z.,** Abu Hassan, R., Alnajjar, R. (2021). Characterization of Spent Oil Shale as a Catalyst for Tar Removal. In: 2021 Ninth Jordan International Chemical Engineering Conference (JIChEC9, 2021), Amman, Jordan.

- **Abu El-Rub, Z.** (2018). *Characterization of Spent Oil Shale as a Catalyst for Tar Removal.* In: 2018 3rd International Conference on New Energy and Applications (ICNEA 2018), Singapore.

- **Abu El-Rub, Z.,** Kähler, B., Al-Khatib, J. (2017). *University-Industry Collaboration: A Case Study from the German Jordanian University*. In: 3rd MENA Higher Education Leadership Forum, Dubai, UAE.

- **Abu El-Rub, Z.** "Dissemination and Implementation Lecture for VTC Project", 6th global conference on Renewables and Energy Efficiency for Desert Regions (GCREEDER-2018), 3-5 Apr 2018, Amman, Jordan.
- Taftanazi, Y., Neumann, H., Burger, D., Hagelstein, G., **Abu El-Rub, Z.,** Gschwander, S. (2017), *Stability study of Phase Change Material between 100 °C and 200 °C*. Paper presented at the 8th Jordan International Chemical Engineering Conference, Amman, Jordan.

- **Abu El-Rub, Z.** "Removing Model Tar Component over a Fixed Bed of Biomass Char", International Conference of Young Scientists on Innovative Applied Renewable Energy Researches, 18-20 May 2014, German Jordanian University, Amman, Jordan
- **Abu El-Rub, Z.**, Bramer, E.A., Brem, G., "Formulation of a Single Char Particle Model for naphthalene Removal in Biomass Gasification" published in the 7th Jordan International Chemical Engineering (JIChE 07) Conference, Amman, Jordan, 4-6 Nov. 2014
- **Abu El-Rub, Z.,** "Oil Shale Retorting Technologies –Jordanian Perspective", Chemical Engineering Scientific Day, 8 May 2014, Al-Huson College – Al-Balqa University, Irbid, Jordan.
- Vilas S. Koleshwar, Khaled A. Al-Yousef, R. Schook, **Z. Abu El-Rub**, "De-bottlenecking of Produced Water Treatment in Mature Heavy Oil Fields" Oil and Gas Water Management: From Reservoir to Reuse/Disposal, 20 – 21 March 2012, Intercontinental Hotel, Al-Khobar, Saudi Arabia
- **Abu El-Rub, Z.,** "Inline Desander Qualification", 2nd Annual 2012 Global Sand Management and Control Workshop, 27 Feb-01 Mar 2012, Dubai, UAE.
- Vilas S. Koleshwar, Khaled A. Al-Yousef, R. Schook, **Z. Abu El-Rub**, "De-bottlenecking of Produced Water Treatment in Mature Heavy Oil Fields", 4th Annual 2011 Global Produced Water Management, 24-28 Oct. 2011, Istanbul, Turkey.
- **Abu El-Rub, Z.**, Bramer, E.A., Brem, G., Tar removal using biomass char as a catalyst, Biomass AIO day, held at Wageningen UR, Thursday 29th September 2005.
- **Abu El-Rub, Z.**, Bramer, E.A., Brem, G., Tar reduction using char as a catalyst, Biomass Conversion Symposium, TU Eindhoven/TDO, 11 March 2005.
- **Abu El-Rub, Z.**, Bramer, E.A., Brem, G., High-Temperature Catalytic Tar Removal from Producer Gas of Biomass Fueled Gasifiers, Netherlands Process Technology Symposium (NPS4), 26-27 Oct. 2004, Veldhoven, The Netherlands.
- **Abu El-Rub, Z.**, Bramer, E.A., Brem, G., High-Temperature Catalytic Tar Removal from Producer Gas of Biomass Fueled Gasifiers, Netherlands Process Technology Symposium (NPS3), 28-29 Oct. 2003, Veldhoven, The Netherlands.

REFERENCES

Available upon request.