MUNTHER ISSA KANDAH

CONTACT

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- Research Gate
- Google Scholar
- Scopus

https://www.scopus.com/authid/detail.uri?authorId=6603547385

Education

09/1993 - 06/1997

Ph.D., Chemical Engineering, McGill University. Montreal-Canada,
Ph.D., Thesis: Particles emission control at graphite cathode in arc ion plating deposition.

09/1991 - 10/1993

M.Sc., Chemical Engineering, McGill University, Montreal-Canada
M.S., Thesis: Droplets generation mechanisms by graphite cathodes in the vacuum arc deposition technique.

09/1982 - 06/1987

B.Sc., Chemical Engineering, Yarmouk University, Irbid-Jordan
B.Sc., Project: A new method of beneficiation of phosphate rock by using acetic acid.

Scholarships & Awards

1. Scholarship from Jordan University of Science & Technology towards MS & Ph.D. in Chemical Engineering, Canada, McGill University, 1991-1997.

2. An award for the paper "**Removal of nickel ions from water by multi-walled carbon nanotubes**" as one of the best three research projects in the nanotechnology application for the year 2007. This award was given by the **Association of Arab Universities**

3. An award for supervising the best graduation project in the engineering colleges among the Jordanian Universities for the year 2007. This award was given by the **Jordanian Engineering Association**

4. An award for supervising the best graduation project in the engineering colleges among the Jordanian Universities for the year 2009. This award was given by the **Jordanian Engineering Association**

5. The first prize in **The First Innovation Olympiad** held by the Center of Excellence for Innovative Projects at Jordan University of Science & Technology, April 2018

LANGUAGES

English: Excellent

Arabic: Native

Personal Data

Date of Birth: 21-01-1964

Place of Birth: Zarka - Jordan

Nationality: Jordanian/Canadian

Marital Status: Married

Research Interest

1. Thermal Plasma Technology (Physical Vapor Deposition (PVD)),
2. Utilization of disposal solid wastes,
3. Adsorption,
4. Nanotechnology,
5. Renewable energy,
6. Fuel cell,
7. Production of biodegradable bioplastics from natural wastes,
8. Detergent manufacturing and development.

6. The first prize in **The Third AIChE Middle East Regional Chem-E-Car Competition** held in Bahrain International Exhibition & Convention Center, October 14-15, 2019.
7. The 3rd place for the high school project (HSREP03-1224-200014). This award was given by the **Qatar National Research Fund (QNRF)**

WORK EXPERIENCE

From September 2023 to present: Chairman of the Chemical Engineering Department at Jordan University of Science & Technology.

From August 2020 to August 2023: Academic Staff at University of Doha for Science & Technology, Doha-Qatar.

From September 2015 to September 2017: Chairman of the Chemical Engineering Department at Jordan University of Science & Technology.

From September 2013 to September 2014: Sabbatical Leave at Al Imam Mohammad Ibn Saud Islamic University, Kingdom of Saudi Arabia.

From September 2009 to September 2011: Chairman of the Chemical Engineering Department at Jordan University of Science & Technology.

From September 2008 to date: Professor, Department of Chemical Engineering, Jordan University of Science & Technology (JUST).

From September 2006 to September 2007: Represent the Engineering College in the University Council at JUST

From September 2006 to September 2007: Represent the Chemical Engineering Department in the Engineering College Council at JUST.

From September 2005 to September 2006: Visiting Researcher,

Teaching

B.Sc. and M.Sc. courses

1. Advanced Transport Phenomena.
2. Engineering Economics & Industrial Management.
3. Chemical Process Industries.
4. Fluid Mechanics.
5. Chemical Reaction Engineering.
6. Materials Science and Engineering.
7. Corrosion Engineering.
8. Chemical Engineering Fundamentals.
9. Communication Skills for Engineers.
10. Thermodynamics
11. Petroleum Lab.
12. Heat Transfer Lab.
13. Chemical Measurements & Testing Lab.
14. Fluid Mechanics Lab.
15. Special Topics: New Trends in Chemical Engineering.
16. Ethics for Chemical Engineers.

Department of Chemical Engineering, McGill University, Thermal Plasma Technology Center (CRTP), "Production of carbon nanotubes (CNT) impeded in diamond-like films".

From September 2001 to September 2005: Consultant and Research & Development leader for Arabella Company for Paints Industry in Jordan

From September 2004 to September 2005: Vice Director at the Consultative Center for Science & Technology and Director of the Linking with Industry Department at Jordan University of Science & Technology.

From September 2001 to September 2004: Assistant Director at the Consultative Center for Science & Technology and Director of the Linking with Industry Department, Jordan University of Science & Technology.

From June 2003 to September 2008: Associate Professor, Department of Chemical Engineering, Jordan University of Science & Technology (JUST).

From September 1997 to date: Academic staff, Department of Chemical Engineering, Jordan University of Science & Technology (JUST).

From September 1997 to June 2003: Assistant Professor, Department of Chemical Engineering, Jordan University of Science & Technology (JUST).

From May 1997 to August 1997: Post Graduate Researcher, Department of Chemical Engineering, McGill University, Montreal, Canada, Thermal Plasma Technology Center (CRTP).

From September 1990 to September 1991: Research and teaching assistant, Department of Chemical Engineering, Jordan University of Science & Technology (JUST).

Short Courses

Workshops:

I held the following workshops:

1. The Scientific Methods in Detergent Manufacturing
2. Corrosion Control and Prevention.
3. Safety in Chemical Laboratories.
4. Aircraft Corrosion Prevention.
5. Drinking Water Treatment in Private Stations.

I have attended the following short courses:

1. Short course during the 1993 material research society (MRS) fall meeting "**Plasma technology for thin film deposition**", Boston-USA, November 29 (1993).

2. Short course during the 1993 material research society (MRS) fall meeting "**Film formation, adhesion, and surface preparation**", Boston-USA, November 30 (1993).

3. Short course

From March 1988 to March 1990: Industrial Experience as a Detection and Decontamination Engineer at the Jordanian Army.

Publications

Articles and Conferences

1. **M. Kandah** and J.-L. Meunier, "Thermal effects leading to particles emission from vacuum arcs on graphite cathodes," 44th Canadian Chem. Eng. Con., Calgary-Canada, October (1994). https://www.researchgate.net/publication/224448319_Study_of_microdroplet_generation_from_vacuum_arcs_on_graphite_cathodes
2. **M. Kandah** and J.-L. Meunier, "Vacuum arc movement on various graphite cathode ion sources for diamond-like films production," 12th Int. Conf. on Plasma Chemistry, Minneapolis-USA, August 21-25 (1995). https://www.researchgate.net/publication/231129501_Vacuum_arc_cathode_spot_movement_on_various_kinds_of_graphite_cathodes
3. **M. Kandah** and J.-L. Meunier, "Study of microdroplet generation from vacuum arcs on graphite cathodes," J. Vac. Sci. Technol. A, Vol. 13, No. 5, pp. 2444-2450 (1995). https://www.researchgate.net/publication/224448319_Study_of_microdroplet_generation_from_vacuum_arcs_on_graphite_cathodes
4. **M. Kandah** and J.-L. Meunier, "Erosion study on graphite cathodes using pulsed vacuum arcs," 45th Canadian Chem. Eng. Conf., Québec-Canada, October (1995). https://www.researchgate.net/publication/3163884_Erosion_study_on_graphite_cathodes_using_pulsed_vacuum_arcs
5. **M. Kandah**, J.-L. Meunier and R. Gauvin, "Vacuum arc cathode spot characterization on graphite materials using field emission gun scanning electron microscopy (FEGSEM)," Microscopy and Microanalysis 97, Clevelan-Netherland, May (1995).

"**Environmental Impact Assessment Report Preparation Course**", King Hussein Environmental Management Training Program, Amman-Jordan, April (1998).

4. Short course "**The Seven Habits of Highly Effective People**", The Consultative Center for Science & Technology, Jordan University of Science & Technology, Irbid-Jordan, 16-20 September (2001).

5. Short course "**Effective Teaching Using Multimedia**", The Consultative Center for Science & Technology, Jordan University of Science & Technology, Irbid-Jordan, 27-29 September (2004).

6. Short course "**AutoCAD-3D**", The Consultative Center for Science & Technology, Jordan University of Science & Technology, Irbid-Jordan, 3-7 July (2005).

https://www.cambridge.org/core/journals/microscopy-and-microanalysis/article/abs/vacuum-arc-cathode-spot-characterization-on-graphite-materials-using-field-emission-gun-scanning-electron-microscopy-fegsem/30675D65AD65A4E453A2153715C7D164

6. **M. Kandah** and J.-L. Meunier, "Erosion study on graphite cathodes using pulsed vacuum arcs," IEEE Trans. Plasma Sci., Vol. 24, No. 2, pp. 523-527 (1996). https://www.researchgate.net/publication/3163884_Erosion_study_on_graphite_cathodes_using_pulsed_vacuum_arcs

7. **M. Kandah** and J.-L. Meunier, "Vacuum arc cathode spot movement on various kinds of graphite cathodes," Plasma Sources Sci. & Technol., Vol. 5, pp. 349-355 (1996). https://www.researchgate.net/publication/231129501_Vacuum_arc_cathode_spot_movement_on_various_kinds_of_graphite_cathodes

8. **M. Kandah** and J.-L Meunier, "Graphite surface characteristic effects on vacuum arc behavior in arc ion plating of diamond-like films," 9th. Can. Mat. Sci. Conf., McGill University, Montreal-Canada June (1997). https://www.cmscconf.org/history/

9. **M. Kandah** and J.-L. Meunier, "The benefits of using a steered arc in the continuous mode over graphite cathodes," XXIII International Conference on Phenomena in Ionized Gases (ICPIG), Toulouse-France, July (1997). https://apps.dtic.mil/dtic/tr/fulltext/u2/a357742.pdf

10. **M. Kandah** and J.-L. Meunier, "Graphite porosity effects on low pressure cathode spot morphology," 13th. International Symposium on Plasma Chemistry (ISPC-13), Beijing- China, August (1997). https://books.google.com.qa/books/about/ISPC_13.html?id=UYblAQAACAAJ&redir_esc=y

11. J.-L. Meunier, S. Coulombe and **M. Kandah**, "Predictions and observations of carbon liquid phase conditions in electric arc/cold cathode interaction," 50th Canadian Chemical Engineering Conference, Montreal-Canada, October 15-18 (2000).

Committees:

I have served on a number of committees at the regional, national and university levels. The more prominent ones include:

Reviewer for many International Journals and Conferences such as:

1. Plasma Sources Science & Technology
2. Journal of Agricultural & Food Chemistry
3. Separation and Purification Technology
4. Enzyme and Microbial Technology
5. Separation Science and Technology
6. Journal of the Chinese Institute of Chemical Engineers
7. Chemical Engineering Journal
8. World Journal of Chemical Engineering (WJChE)
9. Journal of Hazardous Materials
10. Jordan International Chemical Engineering Conference
11. Journal of cleaner production
12. CLEAN - Soil, Air, Water Journal

https://www.researchgate.net/publication/335655717_The_50th_Canadian_Society_of_Chemical_Engineering_Conference

12. **M. Kandah**, "The sorption of zinc(II) on solid sheep manure waste," 51st Canadian Chem. Eng. Conf., Halifax-Canada, 14-17 October (2001)
.https://www.researchgate.net/publication/238118600_Zinc_adsorption_from_aqueous_solutions_using_disposal_sheep_manure_waste_SMW
13. **M. Kandah**, "Zinc adsorption from aqueous solutions using disposal sheep manure waste (SMW)," Chem. Eng. J., Vol. 84, pp. 543-549 (2001). https://www.researchgate.net/publication/238118600_Zinc_adsorption_from_aqueous_solutions_using_disposal_sheep_manure_waste_SMW
14. **M. Kandah**, M. Campbell, J.-L. Meunier, and S. Coulombe, "Low pressure arcing on graphite: evidence of a columnar growth layer within the cathode spot," 29th IEEE International Conference on Plasma Science, Banff, Alberta, Canada, 26-30 May (2002).
https://scienceon.kisti.re.kr/srch/selectPORSrchArticle.do?cn=NPAP00576088
15. Hasan Mousa, **Munther Kandah** and Fahmi A. Abu Al-Rub, "Removal of copper using fluidized bed," Jordan International Chemical Engineering Conference IV, Amman-Jordan, 22-24 September (2002)
.https://www.researchgate.net/publication/271759765_Removal_of_Copper_Lead_and_Cadmium_Ions_in_a_Fluidized_Bed
16. Fahmi A. Abu Al-Rub, **Munther Kandah** and Naser Aldabaibeh, "Nickel removal from aqueous solutions using sheep manure wastes," Chem. Eng. Technol., Vol. 2, No. 4, pp. 111-116 (2002).
https://www.researchgate.net/publication/227839892_Nickel_Removal_from_Aqueous_Solutions_Using_Sheep_Manure_Wastes
17. **M Kandah**, Fahmi A. Abu Al-Rub and Naser Al-Dabaybeh, "Competitive adsorption of copper-nickel and copper-

Organization committee for:

1. Organizing and Scientific committee in "**The Sixth Scientific Day of the Faculty of Engineering**," Jordan University of Science & Technology, Irbid-Jordan, May (1999).
2. Organizing and Scientific committee in "**Jordan International Chemical Engineering Conference IV**," Amman-Jordan, 22-24 September (2002).
3. Scientific committee in "**1st International Nuclear and Renewable Energy Conference (INREC10),**" Amman, Jordan, March 21-24 (2010)
4. Organizing and Scientific committee in, "**International Conference Coordinating Engineering for Sustainability and Resilience (CESARE'17),**" MOVENPIC Hotel in Dead Sea from 3-8 May 2017.

cadmium binaries on sheep manure waste," Chem. Eng. Technol., Vol. 2, No. 8, pp. 237- 243 (2002).
https://www.researchgate.net/publication/230172628_Competitive_Adsorption_of_Copper-Nickel_and_Copper-Cadmium_Binaries_on_SMW

18. M. I. Kandah, "The potential use of low-grade phosphate rocks as adsorbent," Chem. Eng. Technol., Vol. 25, No. 9, pp. 921-924 (2002).
https://www.researchgate.net/publication/239072214_The_Potential_Use_of_Low-Grade_Phosphate_Rocks_as_Adsorbent

19. Fahmi A. Abu Al-Rub, **Munther Kandah** and Naser Al-Dabaybeh, "Competitive adsorption of nickel and cadmium on sheep manure wastes: experimental and prediction studies," Sep. Sci. Technol., Vol. 38, No. 2, pp. 483-497 (2003).
https://www.researchgate.net/publication/233107847_Competitive_Adsorption_of_Nickel_and_Cadmium_on_Sheep_Manure_Wastes_Experimental_and_Prediction_Studies

20. Munther I Kandah Fahmi A. Abu Al-Rub, and Naser Al-Dabaybeh, "The aqueous adsorption of copper and cadmium ions onto sheep manure," Adsorpt. Sci. Technol., Vol. 21, No. 6, pp. 501-509 (2003).
https://www.researchgate.net/publication/244738708_The_Aqueous_Adsorption_of_Copper_and_Cadmium_Ions_onto_Sheep_Manure

21. J-L Meunier, M. Campbell, and **M. Kandah** "Evidence of columnar diamond growth structures within cathode spot craters of vacuum arcs on carbon," J. Phys. D: Appl. Phys., Vol. 36, No. 24, pp. 3138 –3143 (2003).
https://www.researchgate.net/publication/230940493_Evidence_of_columnar_diamond_growth_structures_within_cathode_spot_craters_of_vacuum_arcs_on_carbon

22. M. Kandah and J.-L. Meunier, "A novel particle-free cathodic arc carbon ion source," XVth International Conference on Gas Discharger and their Applications, Toulouse-France, 5-10 September (2004).
http://www.gbv.de/dms/tib-ub-hannover/490115268.pdf

Memberships:

- Member in the Jordan Engineers Association
- Member in the National Industry Support Commission (NISC)

Current Research

A project titled "**Development of Advanced Multilayer Architectured Materials for Electromagnetic Wave Absorption**," has been awarded a grant under the ARG 1st Cycle cycle/call of the Academic Research Grant under the number ARG01-0504-230068. The fund amounts $670,000

23. . **M.I. Kandah**, "Zinc and cadmium adsorption on low-grade phosphate," Sep. Purif. Technol., Vol. 35, pp. 61-70 (2004). https://www.researchgate.net/publication/222731133_Zinc_and_Cadmium_Adsorption_on_Low-Grade_Phosphate

24. Hasan Mousa, **Munther Kandah** and Fahmi Abu Al-Rub, "Removal of copper, lead and cadmium ions in a fluidized bed," Sep. Sci. Technol., Vol. 39, No. 8, pp. 1751-1760 (2004). https://www.researchgate.net/publication/271759765_Removal_of_Copper_Lead_and_Cadmium_Ions_in_a_Fluidizd_Bed

25. J.-L Meunier, **M. Kandah**, and M. Campbell, "Columnar diamond film coverage of vacuum arc erosion canyons on graphite," IEEE Transaction on Plasma Science, Vol. 33, No. 2, pp. 238-239 (2005). https://ieeexplore.ieee.org/document/1420415

26. M. Tawalbeh, M. Allawzi, and **M. Kandah**, "Production of activated carbon from jojoba seed residue by chemical activation using a static bed reactor," J. Appl. Sci., Vol. 5, No. 3, pp. 482-487 (2005). https://www.researchgate.net/publication/46027591_Production_of_Activated_Carbon_from_Jojoba_Seed_Residue_by_Chemical_Activation_Residue_Using_a_Static_Bed_Reactor

27. **Munther Issa Kandah**, Reyad Shawabkeh, and Mahmoud Ar'ef Al-Zboon, "Synthesis and characterization of activated carbon from asphalt," Applied Surface Science, Vol. 253, pp. 821-826 (2006). https://www.researchgate.net/publication/257027464_Synthesis_and_characterization_of_activated_carbon_from_asphalt

28. **M. Kandah**, J.-L. Meunier, "Production of Carbon Nanotubes on Different Monel Substrates" The Third International Conference on Thermal Engineering: Theory and Applications, May, 21-23, Amman, Jordan (2007) https://www.researchgate.net/publication/268040676_Production_of_Carbon_Nanotubes_on_Different_Monel_Substrates

29. Jean-Luc, Sylvain Coulombe and **Munther Kandah**,

"Erosion of carbon arc cathodes operating in the thermo-field electron emission mode," Plasma Sources Sci. Technol., Vol. 16, pp. 33-41 (2007).
https://www.researchgate.net/publication/230991913_Erosion_of_carbon_arc_cathodes_operating_in_the_thermo-field_electron_emission_mode

30. **Munther Issa Kandah** and Jean-Luc Meunier, "Removal of Nickel Ions from Water by Multi-Walled Carbon Nanotubes," Journal of Hazardous Materials, Vol. 146, pp. 283-288 (2007).
https://www.researchgate.net/publication/6605143_Removal_of_nickel_ions_from_water_by_multi-walled_carbon_nanotubes

31. Mamdouh Allawzi and **Munther Issa Kandah,** "Parametric Study of Biodiesel Production from Used Soybean Oil," European Journal of Lipid Science and Technology, Vol. 110, No. 8, pp. 760-767 (2008).
https://www.researchgate.net/publication/230282054_Parametric_Study_of_Biodiesel_Production_From_Used_Soybean_Oil

32. **Munther Issa Kandah**, M. A. Allawzi, and H. Allaboun, " Improvement of Manure Adsorption Capacity for Cobalt Removal by Chemical Treatment with Citric Acid," Jordan Journal of Civil Engineering (JJCE), Vol. 2, No. 4, pp. 344-354 (2008).
https://www.researchgate.net/publication/320419441_Improvement_of_manure_adsorption_capacity_for_cobalt_removal_by_chemical_treatment_with_citric_acid

33. **Munther Issa Kandah** and Jean-Luc Meunier, "Production of Carbon Nanotubes on Different Monel Substrates," Fluid Dynamics & Materials Processing, Vol. 4, No. 4, pp. 231-236 (2008).
https://www.researchgate.net/publication/268040676_Production_of_Carbon_Nanotubes_on_Different_Monel_Substrates

34. **Munther Issa Kandah** and Jean-Luc Meunier, "Production of Carbon Nanotubes-Nickel Composites on Different Graphite Substrates," Fluid Dynamics & Materials Processing,

Vol. 5, No. 2, pp. 123-136, (2009).
https://www.researchgate.net/publication/265497612_Production_of_Carbon_Nanotubes-Nickel_Composites_on_Different_Graphite_Substrates

35. **Munther I. Kandah**, Fahmi A. Abu Al-Rub, Lucy Bawarish, Mira Bawarish, Hiba Al- Tamimi, Reem Khalil and Raja'a Sa,ada, "Adsorption Of Cadmium Onto Activated And Non-Activated Date Pits," ICEST 2010: International Conference on Environmental Science and Technology, Penang, Malaysia, February (2010).
https://www.researchgate.net/publication/281614180_Adsorption_Of_Cadmium_Onto_Activated_And_Non-Activated_Date_Pits

36. Mamdouh Allawzi, Awni Al-Otoom, Abdulaziz Ajlouni, Fahmi Abu Al-Rub and **Munther Kandah, "**Biodiesel Production from Waste Soybean Oil using Jordanian Oil Shale Ash," 1st International Nuclear and Renewable Energy Conference (INREC10), Amman, Jordan, March 21-24 (2010)
https://www.researchgate.net/publication/224137263_Biodiesel_production_from_waste_soybean_oil_using_Jordanian_oil_shale_ash

37. Naser Hamdi, Fahmi A. Abu Al-Rub, **Munther Kandah** and Hussein Allaboun, "Decontamination of Cu^{2+}-tainted water through biosorption onto palm tree leaf particles," Journal of Civil Engineering (JJCE), Vol.4, No. 3 (2010).
https://www.researchgate.net/publication/320434008_Decontamination_of_Cu2_-_Tainted_water_through_biosorption_onto_palm_tree_leaf_particles

38. Munther I. Kandah, Fahmi A. Abu Al-Rub, Lucy Bawarish, Mira Bawarish, Hiba Al-Tamimi, Reem Khalil, and Raja'a Sa,ada, "Adsorption of Cadmium onto Activated and Non-Activated Date Pits," International Journal of Chemical, Molecular, Nuclear, Materials and Metallurgical Engineering, Vol:4, No:2 (2010).
https://www.researchgate.net/publication/281614180_Adsorption_Of_Cadmium_Onto_Activated_And_Non-Activated_Date_Pits

39. **Munther Kandah**, Fahmi Abu Al-Rub and Dalia Al-Shareef, "Adsorption of Cobalt Ions Immobilized and Non-Immobilized Jordanian Low Grade Phosphate," The 2011 International Conference on Water, Energy and Environment (ICWEE 2011), American University of Sharjah, United Arab Emirates on 14-17 November (2011).
https://www.aus.edu/conferences/ICWEE19

40. Zaid Ahmed Al-Anber, **Munther Issa Kandah**, Mohammad Al-Shannag, Zakaria Al-Qodah, Abdullah Abu-Shaqra "Isobaric Vapor-Liquid Equilibria of Binary Systems Ethyl acetate+ Ethyl benzene + Lithium Bromide" Journal of Thermal Analysis and Calorimetry, DOI: 10.1007/s10973-012-2587-9 (2012).
https://www.researchgate.net/publication/235701970_Isobaric_vapor-liquid_equilibria_of_binary_system_ethyl_acetate_ethyl_benzene_lithium_bromide

41. A. Al-Otoom, M. Allawzi, A. Ajlouni, F. Abu-Alrub, and **M. Kandah**, "The use of oil shale ash in the production of biodiesel from waste vegetable oil," J. Renewable Sustainable Energy, Vol. 4, 063123; DOI: 10.1063/1.4768544 (2012).
https://www.researchgate.net/publication/224137263_Biodiesel_production_from_waste_soybean_oil_using_Jordanian_oil_shale_ash

42. Mohammad M. Fares, Fahmi A. Abu Al-Rub, **Munther Kandah**, Hussein Allaboun, "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 (2012).
https://www.researchgate.net/publication/264619533_Environmentally_friendly_copolymeric_beads_of_Chlorella_vulgaris_and_polymethacrylamide_grafted_aliginic_acid_di-block_copolymers_for_biosorption_of_zinc_ions

43. **Munther Issa Kandah**, "Enhancement of Water Electrolyzer Efficiency**,**" Journal of Energy Technologies and Policy, Vol.4, No.11 (2014).

https://www.researchgate.net/publication/270575337_Enhancement_of_Water_Electrolyzer_Efficiency

44. **Munther Kandah**, Fahmi Abu Al-Rub and Dalia Al-Shareef, "Converting Low Grade Solid Wastes into Useful Products," International Conference Coordinating Engineering for Sustainability and Resilience (CESARE'17), MOVENPIC Hotel in Dead Sea from 3-8 May (2017).

https://www.just.edu.jo/Conferences/asec/Documents/accepted_abstracts.pdf

45. **Munther Kandah,** Awni Al-Otoom, Mohamad Al-Harahsheh, Adnan Al-Harahsheh, Raed Alzoubi, **"**Extracting Oil from Used Auto Tires at Low Temperature after chemical treatment," Waste Management, Vol. 61, pp. 307-314 (2017).

https://www.researchgate.net/publication/312574991_Extracting_oil_from_used_auto_tires_at_low_temperature_after_chemical_treatment

46. Fahmi A. Abu Al-Rub, Mohammad M. Fares, and **Munther Kandah**, Chapter in Handbook of Metal-Microbe Interactions and Bioremediation "Toxicity of Copper and Remediation Approaches," Edited by Surajit Das and Hirak Ranjan Dash, Taylor & Francis Group, pp. 603-610 (2017).

https://www.researchgate.net/publication/328927651_Remediation_Technology_for_Copper_Contaminated_Soil_A_Review

47. **Munther Issa Kandah**, Khalil I. Ereifej, Mohannd Ali Al-Azzeh, "Characterization and Quantification of Phenolic Compounds in Coffee Beans and Waste," International Journal of Advances in Science, Engineering and Technology(IJASEAT)-IJASEAT, Vol. 7 (2) pp.38-46 (2019). https://www.researchgate.net/publication/334842650_Extraction_identification_and_quantification_of_polyphenols_from_spent_coffee_grounds_by_chromatographic_methods_and_chemometric_analyses

48. Suhil Kiwan, **Munther Kandah** and Ghanem Kandah, "Zero Energy Building in Jordan," 1st International Conference on Mechanical, Aeronautical and Industrial Engineering

Technologies (MechanTek2020), Jordan, 16-18 June (2020). http://mosharaka.net/?Area=Papers&Page=CDB&Sec=Browse&Div=Subjects&Mode=View&Subject=12&Conf=51&Paper=1119

49. **Munther Issa Kandah**, "Production of Biodegradable Bioplastics filled with Jordanian Olive Tree Leaves," Chemical Engineering & Technology, Vol. 45 (00) pp. 1-8 (2022). https://doi.org/10.1002/ceat.202100526

50. **Munther Issa Kandah**, Chapter in the book of Research Developments in Science and Technology, Volume 8, "Electrolysis Design for Hydrogen Production," published by B P International, edited by Dr. Jelena Purenovic. Pages 79-88 (2022). https://doi.org/10.9734/bpi/rdst/v8/2545A.

Print ISBN:978-93-5547-501-5, **Online ISBN:**978-93-5547-508-4
Book Link:https://www.bookpi.org/bookstore/product/research-developments-in-science-and-technology-vol-8/

Chapter Links:https://stm.bookpi.org/RDST-V8/issue/view/700

51. Ahmed Nader, Abdelrahman El-Rewaly, Atia Mahmoud1, **Munther Kandah** and Mohannad AlJarah, " Novel Production of Bioplastic From Qatari Dates Core Waste," ACS Research Conference: Chemistry and Chemical Engineering in MENA" March 10-12, 2022 - Doha, Qata.

52. **Munther Kandah** and Awni Alotoom, "Production of Thermal and Sound Insulators from Used Automobile Tires' Fiber," Jordan Journal of Civil Engineering, Vol. 17 (2), 2023.

53. **Munther Kandah** "Production of Value-Added Fertilizer from Agricultural Waste," The 1st International Conference on Innovation and Technological Advances for Sustainable Development (ITAC2023) in Qatar, 1st and 2nd of March 2023.

54. Mohamed Ouda, Wesam M. Rohouma, **Munther Kandah,** El Manaa Barhoumi, "Off Grid Hybrid PV-Wind System for Hydrogen and Electricity Production in Rural Area," The 1st International Conference on Innovation and Technological Advances for Sustainable Development (ITAC2023) in Qatar, 1st and 2nd of March 2023.

Patents

1. Jean-Luc Meunier and **Munther Kandah**, "Particle-free cathodic arc carbon ion source," United State Patent, Patent No.: US 6,261,421 B1, July 17 (2001).

Cooperation with Industry:

1. **"Development of oil and emulsion paints",** Arabella Company for Paints, Irbid, Jordan.

2. "**Treatment of gases emitted from olive stone dryer"**, Olive Tree Food Processing Company, Al-Mafraq, Jorad.

3. "**Designing and manufacturing two detergent reactors**", Silver Company for Chemical Industries, Irbid, Jordan.

4. **"Production of Road and scarft Paint",** Yamoon Company for Chemical Industries, Irbid, Jordan.

5. **Production and development of marine Paint",** Yamoon Company for Chemical Industries, Irbid, Jordan.

6. "**Utilizing the disposed tissues from scrape tires to be used as thermal insulators**". The Advanced Technical Recycling Material Co., Ltd. Zarka – Jordan.

Supervision of Graduate Students (Master Theses):

1. Mohammad Tawalbeh, "Production of activated carbon from jojoba residue and evaluation of its adsorptive capacity," Master thesis, JUST, 2000. Supervised by Dr. Mamdoh Al- Lawzi and **Dr. Munther Kandah**

2. Thaker Al-Momani, "Numerical solutions of laminar forced convection in an annulus of different irregular cross-section," Master thesis, JUST, 2001. Supervised by Dr. Osamah Haddad and **Dr. Munther Kandah**

3. Naser Mansour Al-Dabaybeh, "Evaluation of animal solid waste (manure) as a new adsorbent," Master thesis, JUST, 2001. Supervised by **Dr. Munther Kandah** and Dr. Fahmi Abu Al-rub

4. Mahmmoud Ar'ef Al-Zboon, "Production of activated carbon from asphalt by chemical activation," Master thesis, JUST, 2005. Supervised by **Dr. Munther Kandah** and Dr. Reyad Shawabkeh

5. Mohannd Ali Al-Azzeh, "Utilization of coffee waste as a source of phenolic compounds, heavy metals adsorbent and energy source," Master thesis, JUST, 2005. Supervised by **Dr. Munther Kandah** and Dr. Khalil Ereifej.

7. Ghanem Kandah, "Toward Nearly Zero Energy Apartment Building" Master thesis, JUST, 2020. Supervised by Dr. Suhil Kewan

and **Dr. Munther Kandah**

8. Nadeen Monim Alsmadi, “Bioplastic production Using Jordan Natural Recourses and Vegetable Waste,” Master thesis, JUST, 2022. Supervised by Dr. Mamdouh A. Allawzi and **Dr. Munther Kandah**.

Supervision of Bachelor Projects:

1. Design of Oxalic Acid Production plant, 1998. Supervised by **Dr. Munther Kandah**
2. Design of Ethylene Oxide Production plant, 1999. Supervised by **Dr. Munther Kandah**
3. Design of Hydrogen Production Plant, 2000. Supervised by **Dr. Munther Kandah**
4. Removal of Zinc Metal Ion from Water by Adsorption Using Waste Tires, 2001. Supervised by **Dr. Munther Kandah** and Dr. Basim Abu-Aljaday
5. Design of Normal Olefin Production plant, 2002. Supervised by **Dr. Munther Kandah**
6. Lube Oil Recycling, 2002. Supervised by Dr. Mamdouh Al-Lawzi and **Dr. Munther Kandah**
7. Design of Ethylene Glycol Plant, 2003. Supervised by **Dr. Munther Kandah**
8. Detergent Production, 2003. Supervised by **Dr. Munther Kandah**
9. Mat Insecticides Production, 2004. Supervised by **Dr. Munther Kandah**
10. Treatment of Heavy Metals Contaminated Soil by Using Onion Plant (Allium Cepa), 2004. Supervised by **Dr. Munther Kandah** and Dr. Khalil Ereifej
11. Design a plant for the Production of Maleic Anhydride, 2005. Supervised by **Dr. Munther Kandah**.
12. Adsorption of Cobalt ions from Simulated Industrial Wastewater onto Jordanian Low Grade Phosphate, 2006. Supervised by **Dr. Munther Kandah** and Dr. Fahmi Abu Al-Rub.
13. Removal of Heavy Metals from Aqueous Solution by Using Local Adsorbent, 2007. Supervised by **Dr. Munther Kandah** and Dr. Fahmi Abu Al-Rub.
14. Design of Modal’s Wastewater Treatment Plant, 2008. Supervised

by **Dr. Munther Kandah**.

15. Design a plant for the Production of Nitric Acid, 2009. Supervised by **Dr. Munther Kandah.**

16. Design of Poly Vinyl Chloride Production plant, 2010. Supervised by **Dr. Munther Kandah.**

17. Production of Different Biodegradable Bioplastics, 2017. Supervised by **Dr. Munther Kandah** and Dr. Mamdouh Allowzi.

18. Utilization of Steel cords, 2018. Supervised by **Dr. Munther Kandah**.