

# Resume

**Name:** Kamel Mohamed Mahmoud El-Khatib  
**Title:** Professor of Chemical Engineering  
**Affiliation** Chemical Engineering & Pilot Plant Dept.,  
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**Google scholar citation profile** [https://scholar.google.com/eg/citations?hl=ar&user=aZaf\\_A4AAAAJ](https://scholar.google.com/eg/citations?hl=ar&user=aZaf_A4AAAAJ)

**Prof. Kamel El-khatib** has more than 35 years research experience in Chemical Engineering Technology, 35 years especially for developing different kinds of new nano materials electrocatalyst and developing metallic bipolar plate for polymer electrolyte membrane fuel cell applications, wastewater treatment and electricity generation using microbial fuel cell. He has experience in process design, technical evaluations for different industries and techno-economic analysis. He has participated in the development and analysis of extraction of salts from Quaron lake and responsible for complete engineering tasks involving design, specification and installation of salt refinery. Also, pilot plant studies, economic and technical analysis of overall plant performance. He participated in the development of a novel and stable non-enzymatic glucose biosensor that based on  $\text{Cu}_2\text{O}$  nanoparticles. He has an experience in water desalination using thermal and membrane technology. He published 107 research paper in internationa, national and conferences; 83 peer reviewed papers in international Journals, 16 papers in conference and 8 papers in national journals , published books with total citations 2102 and 2589, H-index 26 and 30 from Scopus and Google scholar, respectively. Presented a lot of research work at international and local conferences. He awarded and participated in 38 projects funded from national and international funding agencies as a principle investigator, co-principle investigator and member. He awarded a publication prize from Misr El-Khaier foundation, National Research Center Scientific excellence prize 2012, National Research Center Scientific appreciation prize 2021, National Research Center publication excellence 2012 and Unilever sustainable living plan publication prize 2016. He served as head of the Systems and Information department for 4 years, head of the Engineering Research Division for two year and a deputy head for the Engineering Division for 7 years. He traveled in many scientific missions to Italy and United States. Supervised 12 PhD and 5 Master Thesis. Ruling

on several research proposals, research projects reports, international researches for international journals, master's and doctoral dissertations in the field of specialization. He is participated in many training courses, workshops, local and international conferences. He is a member of the Arbitration Committee of the Promotions Committee in the field of Engineering Sciences. He is a Chairman of the Committee of Scientific Registrations and Research Projects for 6 years. He is a member of Technical Services Committee. He was assigned to teach at private universities, Misr University of Science and Technology and British University.

### **Education:**

- ◆ B.Sc.: Chemical Engineering Department. Faculty of Engineering., Minia University, May 1986.
- ◆ M. Sc.: “Granulation of fine powder using fluidized bed technique”, Chem. Eng. Dept., Faculty of Eng., Cairo University, 1994.
- ◆ Ph.D.: “Study of Factors affecting Performance of Direct Oxidation Methanol Fuel Cell”, Chem. Eng. Dept., Faculty of Eng., Cairo University, 2000.

### **Position:**

- Acting Dean of Engineering Research and Renewable Energy Institute (2022- present)
- Vice Dean of Engineering Research and Renewable Energy Institute, (2015-present)
- Head of Systems & Informations department Engineering Research Division (**August 2010 – 2015**)
- **Professor (Dec. 2010 - present)** in Chemical Engineering & Pilot Plant Department, Engineering Research Division Currently having a grant, as a Research Member, from the STDF, member of a US-Egypt joint research project.
- **Associate Professor (2005-2010)** in Chemical Engineering & Pilot Plant Department, Engineering Research Division Currently having a grant, as a Co-investigator, from the joint science board between the National Science Foundation of USA and the Egyptian Academy of Science. The grant is a joint research work with the Institute of Research & Technology Transfer (IRTT), Suny Farmingdale, New York State University, USA, and was awarded to perform a research project in Egypt in the field of fuel cell.
- **Researcher (2000-2005)** in Chemical Engineering & Pilot Plant Department, Engineering Research Division Currently having a grant, as a Co-investigator, from the joint science board between the National Science Foundation of USA and the Egyptian Academy of Science. The grant is a joint research work with the Institute of Manufacturing Research (IMR), Suny Farmingdale, New York State University, USA, and was awarded to perform a research project in Egypt in the field of fuel cell.
- **Researcher Assistant (1994 - 2000)** in Chemical Engineering & Pilot Plant Department, National Research Center, Egypt. Work includes industrial wastewater treatment, solid polymer electrolyte membrane fuel cell & water desalination technology
- **Assistant Researcher (1989 - 1994)** in Chemical Engineering & Pilot Plant Department, National Research Center, Egypt. Work includes development of granulation system using fluidised bed technique for pharmaceutical application & industrial wastewater treatment.
- **Part time faculty** at BUE (British University in Egypt), El-Shouroque, Egypt, from November 2011-2012.
- **Part time faculty** at MSU (Misr University of Science in Egypt), 6 of October City, Egypt, from September 2011-2012.

- **Member & Secretary of the Permanent Committee for Engineering Sciences August 2020-till now**

### Supervision

#### Master thesis

- **Mohamed Adel**, “Metallic bipolar plate for PEM fuel cell”, Faculty of Engineering, Cairo University, 2005, awarded.
- **Basma Hussien Ali**, “Experimental study of somer PEM fuel cell”, Shubra Faculty of Engineering, Banha University, 2012, awarded.
- **Dena Zakria**, “Simultanuou wastewater treatment and electricity generation using microbial fuel cell”, Faculty of Science, Banha University, awarded.
- **Ali Abdel Aziem** “study the cathode of solid oxide fuel cell prepared by pulsed laser deposition”, National Institue of Laser enhanced science, cairo university, 2014, awarded.
- **Mohamed Ibrahim El-Galad** " techno-economic analysis of different biodiesel production pathways with and without adding tetrahydrofuran as a co-solvent" Faculty of Engineering, Cairo University, 2013, runing.

#### Ph.D. Thesis

- **Shereen Kamel Amin**,”Prediction of Power Requirement in Mixing of Clay Based Pastes”, Faculty of Engineering, Cairo University, 2009, awarded.
- **Mohamed Mahmoud Ali**,“Simultaneous Wastewater Treatment and Electricity Generation using Microbial Fuel Cell“, Faculty of Science, Ain shams University, 2010, awarded.
- **Mohamed Abdel Rehim Abou Said**,“development of polymer electrolyte membrane for fuel cell application using direct oxidation methanol fuel cell“, Faculty of Science, Al-Azhar University, 2010, awarded.
- **Rabab Said Amin**, “Development of Anode Nano Electrocatalysts for Direct Oxidation Methanol Fuel Cell“, Faculty of Science Ain shams university, 2010, awarded.
- **Amani Ebaid Fatouhi**, “Development of a Metallic Bipolar plate using nano material coating for PEM fuel cell Application“, Faculty of Science Ain shams University, 2010, awarded.
- **Hanaa mohamed Almoniry** "studying the performance of photoelectro Microbial fuel cell for wastewater treatment and electricity generation", Faculty of science, Ain shams university, 2015, runing.
- **Dena Zakria**, “Simultanuou wastewater treatment and electricity generation using microbial fuel cell”, Faculty of Science, Banha University,2017, runing.
- **Abd Elrahman Gamal Ahmed**, "Preparation and evaluation of ternery carbon alltropes metal oxide-conducting polymer composite for energy storage application", Faculty of science, Ain shams university, 2017, runing.
- **Fatma Alam**, “Bioelectricity production, water desalination, and wastewater treatment using Bioelectrochemical systems”, faculty of science, Alexandria university, 2015, runing.

#### Field of Interest

- ✚ Hydrogen Fuel Cells (Solid Polymer Electrolyte Membrane Fuel Cell).
- ✚ Nanomaterials catalyst for PEM fuel cell applications.
- ✚ Microbial Fuel Cell
- ✚ Hydrogen storage using Metal Hydride.

- ✚ Wastewater treatment.
- ✚ Water desalination.
- ✚ Chemical engineering process design and technical evaluation.
- ✚ Granulation of fine powders using fluidized bed technique
- ✚ Chemical Process Equipment Design.
- ✚ Mathematical modelin and simulation using Matlab.
- ✚ Techno economic feasibility study.

### **List of Experience in Computer Science**

1. Mathematical modeling and simulation of Chem. Eng. Process using Visual Basic Language & Matlab Program.
2. Drawing of P& I diagram of Chem. Process using AutoCAD Program.
3. Drawing of Equipment and layout diagram of Chem. Process using AutoCAD Program.
4. Representation of Experimental data using Excel, Harvard Graphics, Microsoft word, PowerPoint.

### **Research Experience from abroad**

1. Fuel Cell Technology “Solid polymer electrolyte Membrane Fuel Cell using Methanol as fuel” in CNR, Messina, [Italy](#) for three months in the period from 03/01/1996 to 05/31/1996.
2. Fuel Cell Technology “Solid polymer electrolyte Membrane Fuel Cell using Methanol as fuel” in CNR, Messina, [Italy](#) for three months in the period from 01/19/1998 to 07/24/1998.
3. Fuel cell technology “Solid polymer electrolyte Membrane Fuel Cell using Methanol as fuel” in CNR, Messina, [Italy](#) for three months in the period from 09/15/1998 to 12/17/1998.
4. Fuel cell Technology “Feasibility study of Electric Car powered by Fuel Cell ” in Institute of Manufacturing Research (IMR), Suny Farmingdale, New York State University, [USA](#) for about three months in the period from 08/09/2001 to 10/31/2001.
5. Fuel cell Technology “Feasibility study of Electric Car powered by Fuel Cell ” in the Institute for Research & Technology Transfer (IRTT), Suny Farmingdale, New York State University, [USA](#) for about three months in the period from 01/14/2003 to 07/11/2003.
6. Fuel cell Technology “The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings” in the Institute for Research & Technology Transfer (IRTT, Suny Farmingdale, New York State University, [USA](#) for about six months in the period from 01/20/2005 to 07/21/2005.
7. Fuel cell Technology “The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings” in the Institute for Research & Technology Transfer (IRTT, Suny Farmingdale, New York State University, [USA](#) for about three months in the period from 05/16/2006 to 08/16/2006.
8. Fuel cell Technology “The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings” in the Institute for Research & Technology Transfer (IRTT, Suny Farmingdale, New York State University, [USA](#) for about three months in the period from 05/16/2007 to 08/16/2007.
9. Hydrogen storage using metal hydride, Illinois Institute of Technology (ITT), Chemical Engineering Department, Chicago, Illinois, [USA](#) for about three months in the period from 08/16/2007 to 11/15/2007.
10. Fuel cell Technology “The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings”, Institute for Research & Technology Transfer (IRTT, Suny Farmingdale, New York State University, [USA](#), 05/20/2008 to 08/20/2008

11. Fuel cell Technology “The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings”, Institute for Research & Technology Transfer (IRTT, Suny Farmingdale, New York State University, [USA](#), 05/25/2009 to 08/20/2009.
12. Fuel cell Technology “The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings”, Institute for Research & Technology Transfer (IRTT, Suny Farmingdale, New York State University, [USA](#), 10/03/2011 to 10/31/2011.
13. Fuel Cell Technology “Regenerative fuel cell” in CNR, Messina, [Italy](#) for two weeks in the period from 04/02/2012 to 04/15/2012.
14. Fuel Cell Technology “Regenerative fuel cell” in CNR, Messina, [Italy](#) for two weeks in the period from 04/15/2013 to 05/03/2013.

### **Science Outreach**

- I gave a series of Talks in several TV shows, such as Nile TV international, Breakfast TV show, Almanara Scientific Channel, Nile Cultural Channel, O2V channel, etc, about my research at NRC.
- I wrote some articles at newspapers, such as Al-Ahram, etc, about my research work at NRC.

### **Active Technical Reviewer**

- ✚ **ACS Journals** (Energy & Fuels, Industrial & Engineering Chemistry Research)
- ✚ **Elsevier Journals** (International Journal of Hydrogen Energy, Electrochimica acta, Journal of Alloys and Compounds, Journal of Surface and Coatings Technology, journal of power sources, journal of industrial and Engineering Chemistry, Energy Conversion and Management, Biomass and Bioenergy, Nanoscale, Renewable & Sustainable Energy Reviews, Energy & Fuels.
- ✚ **Springer Journals** (Journal of Applied Electrochemistry, Journal of Materials Science, Applied Physics A)
- ✚ **Science and Technology** Development Fund Proposal and Projects Evaluator
- ✚ **National Research Center** Proposal and Projects report Evaluator
- ✚ A judge for M.Sc. and Ph.D. thesis at engineering and science collage.

### **Editorial Board Member**

- ✚ Journal of Petroleum Engineering
- ✚ Journal of the international society of science and engineering

### **Published Book**

1. [K. M. El Khatib](#), Dena Z. Khater, Helmy M. Hassan, Microbial diversity and performance of microbial fuel Cell: Effect of Microbial diversity activity on the performance of single chamber microbial fuel cell, May 11, 2017, ISBN-10: 3330081538, ISBN-13: 978-3330081536, LAP LAMBERT Academic Publishing, 80 pages. <https://www.amazon.com/Microbial-diversity-performance-microbial-fuel/dp/3330081538>.
2. Sayeda M. Abdo, Entesar Ahmed, Sanaa Abo El-Enin, Guzine El Diwan, [K.M. El-Khatib](#), Gamila H. Ali and Rawheya A. Salah El Din, HANDBOOK OF ALGAL BIOFUELS Aspects of Cultivation, Conversion, and Biorefinery , Algal fuel production by industry:

### **National Publications:**

1. [K. M. El Khatib](#), S. A. El Nawawi & H. A. Mostafa, "Studies on factors affecting granulation of fine powder by using fluidized bed technique part I", vol. 20, No. 2, [The transaction of the Egyptian Society of Chemical Engineering Journal](#), Page 137-151, 1994.
2. [K. M. El Khatib](#), S. A. El Nawawi & H. A. Mostafa, "Studies on factors affecting granulation of fine powder by using fluidized bed technique part II", vol. 20, No. 2, [The Transaction of the Egyptian Society of Chemical Engineering Journal](#), Page 152-164, 1994.
3. [K. M. El-Khatib](#), H. A. El-Abd, S. A. El Nawawi, "Study of the factors affecting performance of direct oxidation methanol fuel cell", [The Transaction of the Egyptian Society of Chemical Engineering Journal](#), 2000.
4. [K.M. El-Khatib](#), A. H. Eissa, A. S. Abd El-hamid, and Abd El-Shafy A. Nafeh, "Dynamics of a Photovoltaic Fuel Cell Hybrid Energy System", [Al-Azhar University Engineering Journal](#), Volume 6, No. 1, 2003.
5. A. S. Abd El-hamid, A. H. Eissa, A. M. Radwan, and [K.M. El-Khatib](#), Dynamics Modeling, Simulation and Control of Spray Dryer using Conventional PID and Hybrid Fuzzy P + ID Controllers, Vol. 30, No. 1, [The Transaction of the Egyptian Society of Chemical Engineering Journal](#), 2004.
6. D. Z. Khater, [El-Khatib K.M.](#), Hazaa M. and Hassan R. Y. A., 2015. Activated Sludge-based Microbial Fuel Cell for Bio-electricity Generation. [Journal of Basic and Environmental Sciences](#), 2, pp.63–73.
7. [K.M. El-Khatib](#), A.H. Eissa, M.A. Khedr, "Transient model, simulation and control of a Multi-Stage Flash Evaporation (MSF) desalination system, Vol. 32, No. 1, [The Transaction of the Egyptian Society of Chemical Engineering Journal](#), 2005.
8. Azza Hafez, Maaly Khedr, [Kamel El-Khatib](#) & Hanaa Gadallah, " Bench Scale Investigation of Physiochemical and Ultrafiltration Techniques for the Treatment El-Salaam Canal Water, Sinai, Egypt", [The Transaction of The Egyptian Society of Chem. Engineers](#), 2009.

### **International Publications:**

1. S. Arico, A. K. Shukla, [K.M. El Khatib](#), P. Creti & V. Antonucci, "An X-ray photoelectron spectroscopic study on the effect of Ru and Sn additions to platinised Carbons", [Applied Surface Science](#), Vol. 137 (1-4) pp. 20-29 (1999).
2. S. Arico, A. K. Shukla, [K. M. El Khatib](#), P. Creti & V. Antonucci, "Effect of carbon-supported and unsupported Pt-Ru anodes on the performance of Solid-Polymer-Electrolyte direct methanol fuel cells", [Journal of applied Electrochemistry](#), 29 (6): 673-678, June 1999.
3. [K. M. El-Khatib](#) ; M.O. Abou Helal; A.A. El-Moneim; H. Tawfik "Corrosion stability of SUS316L HVOF sprayed coatings as lightweight bipolar plate materials in PEM fuel", [journal of anti-Corrosion method and material](#), Volume 51, No. 2 , P. 136-142, 2004.
4. [K.M. El-Khatib](#), A. H. Eissa, A. S. Abd El-hamid, "Transient Model and Control of Single Effect Vapor Compression Desalination System", [Desalination](#) 166 (2004) 157–165

5. Yue Hung, [K. M. El-Khatib](#), and Hazem Tawfik, "Corrosion Resistant, Lightweight Metallic Bipolar Plates For PEM Fuel Cells", [Journal of applied Electrochemistry](#), volume 35, Number 5, pp. 445-447, 2005.
6. Yue Hung, [K.M. El-Khatib](#), and Hazem Tawfik, "Testing and Evaluation of Aluminum Coated Bipolar Plates of pem fuel cells operating at 70° C", [Journal of Power Sources](#), Volume 163, Issue 1, 7 December 2006, 509-513.
7. H. Tawfik, , [K.M. El-Khatib](#), Y. Hung , and D. Mahajan, "Effects of Bipolar Plate Materials and Impurities in Reactant Gases on the Power Output of PEM fuel Cells" [Ind. Eng. Chem. Res.](#), 46(26) (2007) 8898-8905..
8. Elham El-Zanati, [K.M. El-Khatib](#). "Integrated Membrane-Based desalination System, [Desalination](#), Volume 205, Issues 1-3, 5 February 2007, Pages 15-25.
9. Y Hung, H Tawfik, [K.M. El-Khatib](#), H El-Abd, Corrosion and contact resistance measurements of different bipolar plate material for Polymer Electrolyte Membrane Fuel Cells, - [International Journal of Alternative Propulsion](#), 2 (1), 72-85, 2008
10. Azza Hafez, Maaly Khedr, [Kamel El-Khatib](#), Hanaa Gad Alla, Samir Elmanharawy El-Salaam Canal project, Sinai II. Chemical water quality investigations, [Desalination](#) 227 (2008) 274–285.
11. Azza Hafez, Maaly Khedr, [Kamel El-Katib](#), Hanaa Gadallah, El-Salaam Canal Water, Sinai, Egypt. Part V. Techno-economic study for integrated treatment plant, [Desalination and Water Treatment](#), 8 (2009) 286–293.
12. Azza Hafez, Maaly Khedr, [Kamel El-Katib](#), Hanaa Gadallah, "Pilot scale investigation of low pressure nanofiltration and reverse osmosis membrane techniques for the treatment of El-Salaam canal water, Sinai, Egypt", [Desalination and Water Treatment](#), 8 (2009) 279–285.
13. SH. K. Amin, [K.M. El-Khatib](#), M.F. Abadir, Rheological characteristics of clay sewer pipes paste, [Industrial Ceramics magazine](#), Vol. 29, 3/2009.
14. R.M. Abdel Hameed, [K.M. El-Khatib](#), Ni–P and Ni–Cu–P modified carbon catalysts for methanol electro-oxidation in KOH solution, [International Journal of Hydrogen Energy](#), volume 35, issue 6, (2010), 2517-2529.
15. M. S. Mohy Eldin, A.A. Elzatahry, [K.M. El-Khatib](#), E. A. Hassan, M. M. El-Sabbah, M. A. Abu-Saied, " Novel Grafted Nafion Membranes for Proton Exchange Membrane Fuel Cell (PEMFC) Applications", [Journal of Applied Polymer Science](#), Volume 119, Issue 1, (2011),120–133
16. [K.M. El-Khatib](#), R.M. Abdel Hameed, Development of Cu<sub>2</sub>O/Carbon Vulcan XC-72 as non-enzymatic sensor for glucose determination, [Biosensors and Bioelectronics](#), 26 (2011) 3542–3548.
17. R. S Amin, [K. M El Khatib](#), randa M. Abdel Hameed, Eglal R Souaya, Mohamed A Etman, Synthesis of Pt-Co nanoparticles on multi-walled carbon nanotubes for methanol oxidation in H<sub>2</sub>SO<sub>4</sub> solution, [Applied Catalysis A: General](#), Volume 407, Issues 1-2, 4 November 2011, 195-203.
18. R.S. Amin, A.A. Elzatahry, [K.M. El-Khatib](#), M. Elsayed Youssef, Nanocatalysts Prepared by Microwave and Impregnation Methods for Fuel Cell Application, [International Journal of Electrochemical Science](#), 6 Issue 10 (2011) 4572 – 4580.
19. SH. K. Amin, [K.M. El-Khatib](#), M.F. Abadir, Prediction of Power Requirement in Mixing of Clay Based Pastes, [Industrial Ceramics magazine](#), Vol. 31, 3/2011, 193-199.
20. M. S. Mohy Eldin, M.A. Abu-Saied, A.A. Elzatahry, [K.M. El-Khatib](#), E. A. Hassan, M. M. El-Sabbah, Novel Acid-Base Poly vinyl chloride-Doped Ortho-Phosphoric Acid Membranes for Fuel Cell Applications, [International Journal of Electrochemical Science](#), 6 issue11 (2011) 5417 – 5429.

21. M. Mahmoud , T.A. Gad-Allah, [K.M. El-Khatib](#) , F. El-Gohary, Power generation using spinel manganese-cobalt oxide as a cathode catalyst for microbial fuel cell applications. [Bioresour Technol.](#) Nov; 102(22): 2011, 10459-64
22. R.S. Amin, R.M. Abdel Hameed, [K.M. El-Khatib](#), M. Elsayed Youssef and A.A. Elzatahry, Pt-NiO/C anode electrocatalysts for direct oxidation methanol fuel cells, [Electrochimica Acta](#), volume 59, 2012, 499-508
23. M. S. Mohy Eldin, A.A. Elzatahry, [K. M. El-Khatib](#), E. A. Hassan, M. M. El-Sabbah, M. A. Abu-Saied, "Preparation and Characterization of Novel Grafted Cellophane-Phosphoric Acid Membranes for Proton Exchange Membrane Fuel Cell (PEMFC) Applications, [Journal of Applied Polymer Science](#), volume 123, issue 6, 2012, 3710–3724.
24. Amani E. Fetohi, R.M. Abdel Hameed, [K.M. El-Khatib](#), Eglal R. Souaya, Study of different aluminum alloy substrates coated with Ni-Co-P as metallic bipolar plates for PEM fuel cell applications , [International Journal of Hydrogen Energy](#), Volume 37, Issue 9, 2012, Pages 7677–7688.
25. Amani E. Fetohi, R.M. Abdel Hameed, [K.M. El-Khatib](#), Eglal R. Souaya, Ni-P and Ni-Co-P coated aluminum alloy 5251 substrates as metallic bipolar plates for PEM fuel cell applications, [International Journal of Hydrogen Energy](#), Volume 37, Issue 14, 2012, Pages 10807-10817.
26. Hanaa Gadallah, Alan Zdunek, [K.M. El-Khatib](#), Fouad Teymour, Said Al-Halla, Study of Electro De-swelling Properties of Super Absorbents Polymers, Australian [Journal of Basic and Applied Sciences](#), 6(6): 282-291, 2012.
27. R.S. Amin, R.M. Abdel Hameed, [K.M. El-Khatib](#), Hammam El-Abd, Eglal R. Souaya, Effect of preparation conditions on the performance of nano Pt-CuO/C electrocatalysts for methanol electro-oxidation, [International Journal of Hydrogen Energy](#), Volume 37, Issue 9, 2012, Pages 7677–7688.
28. S. A. Abo El-Enin, N. K. Attia, N. N. El-Ibiari, G. I. El-Diwani, [K.M. El-Khatib](#), In-situ transesterification of rapeseed and cost indicators for biodiesel production, [Renewable and Sustainable Energy Reviews](#), 18 (2013) 471–477.
29. Amani E. Fetohi, R.M. Abdel Hameed, [K.M. El-Khatib](#), Ni-P and Ni-Mo-P modified aluminium alloy 6061 as bipolar plate material for proton exchange membrane fuel cells, [Journal of Power Sources](#), Volume 240, 2013, Pages 589-597
30. Tarik M. Labib, S.I. Hawash, [K.M. El-Khatib](#), E. Abdel Kader, G.I. El-Diwani & Abbas M. Sharaky, Kinetic Study and Techno-Economic Indicators for Base Catalyzed Transesterification of Jatropha Oil, [Egyptian Journal of Petroleum](#), 2013.
31. V. Baglio, D. Sebastián, C. D'Urso, A. Stassi, R.S. Amin, [K.M. El-Khatib](#), A.S. Aricò, Composite anode electrode based on iridium oxide promoter for direct methanol fuel cells, [Electrochimica Acta](#), 128, 2014, 304-310.
32. R.S. Amin, R.M. Abdel Hameed, [K.M. El-Khatib](#), Microwave heated synthesis of carbon supported Pd, Ni and Pd-Ni nanoparticles for methanol oxidation in KOH solution, [Applied Catalysis B: Environmental](#), Volumes 148–149, 27 April 2014, Pages 557–567.
33. R.S. Amin, R.M. Abdel Hameed, [K.M. El-Khatib](#), M. Elsayed Youssef Electro-catalytic activity of nanostructured Ni and Pd-Ni on Vulcan XC-72R carbon black for methanol oxidation in alkaline medium, [International Journal of Hydrogen Energy](#), Volume 39, Issue 5, 4 February 2014, Pages 2026-2041..
34. V. Baglio, R.S. Amin, [K.M. El-Khatib](#), S. Siracusano, C. D'Urso, and A.S. Aricò, IrO<sub>2</sub> as promoter of Pt-Ru for methanol electro-oxidation, [Phys. Chem. Chem. Phys.](#), Volume 16, Issue 22, 14 June 2014, Pages 10414-10418.



35. R.S. Amin, [K.M. El-Khatib](#), S. Siracusano, V. Baglio, A. Stassi, A.S. Aricò, Metal oxide promoter for methanol electro-oxidation, [International Journal of Hydrogen Energy](#), Volume 39, Issue 18, 15 June 2014, Pages 9782-9790.
36. Dena Z. Khater, [K.M. El-Khatib](#), M. M. Hazaa, Rabeay Y. A. Hassan, Development of Bioelectrochemical System for Monitoring the Biodegradation Performance of Activated Sludge, [Appl. Biochem. Biotechnol.](#), April 2015, Volume 175, Issue 7, pp 3519-3530.
37. Amani E. Fetohi, R.M. Abdel Hameed, [K.M. El-Khatib](#), Development of electroless Ni-P modified aluminum substrates in a simulated fuel cell environment, [journal of industrial and Engineering chemistry](#), Volume 30, 25 October 2015, Pages 239-248.
38. RM Abdel Hameed, Amani E Fetohi, RS Amin, [K.M. El-Khatib](#), Promotion effect of manganese oxide on the electrocatalytic activity of Pt/C for methanol oxidation in acid medium, [Applied Surface Science](#), 359 (2015) 651-663.
39. N. Mohammady, S.I. Hawash, [K.M. El-Khatib](#), M.I. El-Galad, G. El Diwani, Biodiesel production from Chlorella Sp: Process Design and Preliminary Economic Evaluation, [International Journal of ChemTech Research](#), Vol.8, No.9, pp 297-304, 2015
40. M El Sayed Youssef, RS Amin, [K.M. El-Khatib](#), Development and performance analysis of PEMFC stack based on bipolar plates fabricated employing different designs, [Arabian journal of Electrochemical Science](#), in press (2015).
41. M. I. El-Galad, [K.M. El-Khatib](#), F.A. Zaher, Economic Feasibility Study of Biodiesel Production by Direct Esterification of Fatty Acids From The Oil and Soap Industrial Sector, [Egyptian Journal of Petroleum](#), Volume 24, Issue 4, December 2015, Pages 455-460.
42. Sayeda M Abdo, SA Abo El-Enin, [K.M. El-Khatib](#), MI El-Galad, SZ Wahba, G El Diwani, Gamila H Ali, Preliminary economic assessment of biofuel production from microalgae, [Renewable and Sustainable Energy Reviews](#), Volume 55, March 2016, Pages 1147-1153.
43. S.I. Hawash, [K.M. El-Khatib](#), G. El Diwani, Environmental and Performance Impact of Jatropha Biodiesel Blends on Combustion in Compression Ignition Engine, [International Journal of Scientific & Engineering Research](#), Volume 6, Issue 11, November-2015, 122-129.
44. R.M. Abdel Hameed, R.S. Amin, [K.M. El-Khatib](#), Amani E. Fetohi, The influence of metal oxides on platinum activity towards methanol oxidation in H<sub>2</sub>SO<sub>4</sub> solution, [ChemPhysChem](#), 41 (3), 1846-1858, 2016.
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  76. Lin Jin, Zhou Huajun, Amin R.S, Fetohi Amani E., [K.M.El-Khatib](#), Wang Chao, Guo Li, Wang Yanzhong, In situ formation of nickel sulfide quantum dots embedded into a two-dimensional metal-organic framework for water splitting, [Inorganic Chemistry Frontiers](#), 2023, 10, 4, 1294 - 1304

### **Publications in Conference**

1. [K. M. El-Khatib](#), H. A. El-Abd, H. Tawfik, “Study of Polymer Electrolyte Membrane Fuel Cell (PEMFC) Parameters on Cell Performance”, [8th International Conference on Energy and Environment](#), Cairo, 2003.
2. Yue Hung, [K. M. El-Khatib](#), and Hazem Tawfik, “Corrosion Resistant, Lightweight, And Inexpensive Metallic Bipolar Plates With Excellent Manufacturability For PEM Fuel Cell Power Systems”, [Second International Conference on Fuel Cell Science, Engineering and Technology](#), June 14-16, 2004, Rochester, NY.
3. Hung, Y., Tawfik, H., [El-Khatib, K.](#), One dimensional mathematical model for PEM fuel cells, EEE Conference on Long Island Systems, Applications and Technology Conference 2005, [LISAT2005](#), art. no. 1515633 , pp. 24-28.
4. [El-Khatib, K.](#), Corrosion rates of different thermal spray coatings for PEM metallic bipolar plates, [IEEE Conference on Long Island Systems, Applications and Technology Conference 2005, LISAT2005 2005](#) , art. no. 1515633 , pp. 24-28.
5. [K. El-Khatib](#), Corrosion rates of different thermal spray coatings for PEM metallic bipolar Long Island Systems, Applications and Technology, 2005. [IEEE Conference](#), 20-20.
6. Y Hung, H Tawfik, [K. El-Khatib](#), One dimensional mathematical model for PEM fuel cells Long Island Systems, Applications and Technology, 2005. [IEEE Conference](#), 24-28
7. Tawfik, H., Anjom, M., Halada, G.P., White, H., Hung, Y., [El-Khatib K.](#), Mahajan, D., Biomass-derived hydrogen for PEM fuel cell performance, [ACS National Meeting Book of Abstracts](#), Volume 232, 2006, 1p.
8. H Tawfik, M Anjom, GP Halada, H White, Y Hung, [K. El-Khatib](#), D Mahajan, PETR 102-Biomass-derived hydrogen for PEM fuel cell performance, [Abstracts of Papers of The American Chemical Society](#) 232, 2006
9. [K.M. El-Khatib](#), H. A. El-Abd, and Hazem Tawfik, “Corrosion and Contact Resistance Measurements of Different Bipolar Plate Material for Polymer Electrolyte Membrane Fuel Cells”, [10<sup>th</sup> International Conference on Energy and Environment](#), Mar 11-15, Luxor, 2007.

10. Azza Hafez, Maaly Khedr, Mervet Bad, [Kamel El-khatib](#), Hanaa Gaddala, Said Alhallag & Fouad Teymour" Energy in Egypt: Current Status and Future Prospects" [Global Conference on Global Warming](#) (GCGW), Turkey, Istanbul, 5-10 July 2008.
11. Alan Zdunek, Abdoulaye Diao, [Kamel El-Khatib](#), Fouad Teymour, Said Al-Hallaj, Water Recovery using a Membrane/Super Absorbent Polymer System", [AMTA/SEDA Conference](#), July 14-17, 2008 , Naples Grande Resort & Club, USA.
12. Santiago, D., Tawfik, H., Ryu, Y., [El-Khatib K.](#), Mahajan, D., Performance optimization of Direct Methanol Fuel Cell, [ASEE Annual Conference and Exposition](#), Conference Proceedings, 2010
13. A.F. Ghanem, M.H. Abd El-Rehim, Ayman T. El-Gendi, [Kamel El-Khatib](#), Fabrication of Novel Hyperbranched Polyester/TiO<sub>2</sub> NWs Nano Composites Membranes for Fuel Cell Application, [2nd Winter School in El-Gouna](#), Febrary 16-20, 2014.
14. Nagwa G-E. Mohammady, El Diwani, G., [El Khatib K.](#), Abdel Alim, S., Kamal, N., El Arabi, R. An Assessment Study on Pilot Scale Unialgal Culture of Nannochloropsis sp. for Biochemicals and Biodiesel Production . Accepted for oral presentation at the [70<sup>th</sup> Annual Meeting of Phycological Society of America](#), [John Carroll University, Cleveland, Ohio, USA](#), July 24 - 30, 2016.
15. Amani E. Fetohi, R.M. Abdel Hameed, [K.M. El-Khatib](#) , Electrochemical behavior of electroless Ni-P coated aluminum substrates in a simulated fuel cell environment, [3<sup>rd</sup> international conference, on corrosion mitigation and surface protection technologies](#), 8-11 December 2014, Luxor, Egypt.
16. M. Elsayed Youssef, Walaa. M. Galal, [K.M. El-Khatib](#), A.A. Elzatahry, and Medhat M. Sorour, Design and modeling of bipolar plates for PEMFC by using comsol software. [Global conference on global warming](#), Istanbul, Turkey, July 8-12, 2012,

### **Prizes award**

1. National Research Center Scientific appreciation prize 2021.
2. Publication prize Misr El-Khaier Foundation 2012.
3. National Research Center Scientific excellence prize 2012.
4. National Research Center publication excellence 2012.
5. Unilever sustainable living plan publication prize 2016

### **Grants/Award**

1. **Principle Invistigator:** Development of graphene based nanomaterials for bioelectricity generation through Tannery Wastewater Treatment using Microbial Fuel Cell, Indian-Egypt collaboration programm, **200,000 LE**, 2019-2021.
2. **Principle Invistigator:** Development of Nano-Materials Electrocatalyst for Direct Oxidation Methanol Fuel Cells, Morocco-Egypt collaboration programm, **50,000 LE**, 2015-2017.
3. **Principle Invistigator:** Synthesis & Charcterization of electrocatalysts for regeneritive fuel cells, Italy-Egypt collaboration programm, **42,000 LE**, 2011-2013.
4. **Principle Invistigator:** Wastewater treatment and Electricity generation simultanuously using microbial fuel cell, Academy of Scientific Research and Technology, **50,000 LE.**, 2009.
5. **Co-Principle Invistigator:** Assessment Study for EMISAL Salt Refining Plant, EEAA – EPAP, **60,000 LE.** (2001),.

6. **Co-Principle Investigator:** Feasibility study of electric car powered by fuel cell, US-Egypt Science and Technology Program, \$50,000, 2001 -2003.
7. **Co-Principle Investigator:** Development of a PEM Fuel Cell Stack and Enhancement of the local Manufacturing of Fuel Cell component, NRC, **600,000 LE.**, 2007.
8. **Co-Principle Investigator:** The Development of A Stationary Polymer Electrolyte Membrane (PEM) Fuel Cell Power System For Buildings, US-Egypt Science and Technology Program, \$50,000, 2006 -2009.
9. **Co-Principle Investigator:** Modeling, Construction and Performance analysis of Proton Exchange Membrane Fuel Cell (PEMFC) as Clean Portable Power Source, the Egyptian Science and Technology development Fund (STDF). **950,000 LE**, 2010-2012.
10. **Co-Principle Investigator:** Development of Nano-Materials Electrocatalyst for Direct Oxidation Methanol Fuel Cells, the Egyptian Science and Technology development Fund (STDF). **550,000 LE**, 2012-2014.
11. **Co-Principle Investigator:** Preparation of bi-metallic nanomaterials as active components for glucose biosensors manufacture, the Egyptian Science and Technology development Fund (STDF). **950,000 LE**, 2013-2015.
12. **Co-Principle Investigator:** water desalination using innovative microbial electrochemical cell with hydrogen peroxide production for industrial application, the Egyptian Science and Technology development Fund (STDF). **1000,000 LE**, 2019-2022.
13. **Co-Principle Investigator:** Development and demonstration of low cost anion exchange membrane (AEM) for hydrogen production system, Academy of Science and Technology (STDF). **2,298,000 LE**, 2021-2024.
14. **Team Member:** Industrial waste water treatment and efficient utilization of water in the industry process at Misr Beida dyers company, 1994-1995.
15. **Team Member:** Information technology for quantities and cost estimation of chemicals produced or consumed in Egypt 1997-1999.
16. **Team Member:** Feasibility study of Electric bus Powered by fuel cell, UNDP, **12,000 LE.** 1998.
17. **Team Member:** Treatment of industrial wastewater of Incogum Co., Alexandria, unit of Engineering development and consulting at National Research Center, **200,000 LE.** 1998.
18. **Team Member:** Assessment of Chemical Production Plant, 6 October City, 2000.
19. **Team Member:** Development of desalination unit using Reverse Osmosi technology for remot areas at Ras seder, Sina, Academy of Scientific Research and Technology, **300,000 LE.** 2001.
20. **Team Member:** Design and implementation of mechanical vapor compression desalination unit, Academy of Scientific Research and Technology, **200,000 LE.,** 2001.
21. **Team Member:** Studies of the factors affecting performance of direct oxidation methanol fuel cell, Austria - Egypt Science and Technology Program, 1999-2002.
22. **Team Member:** Dual Purpose of Water and Electricity Generation in Egypt, Academy of Scientific Research and Technology, **200,000 LE.,** 2005.
23. **Team Member:** Water Treatment of Elsalam Channel in Sina, Academy of Scientific Research and Technology, 2005.
24. **Team Member:** An Integration Approach for hydrogen production and Seawater Desalination using renewable Resources, US-Egypt Science and Technology Program, \$50,000, 2006 -2008.
25. **Team Member:** Consulting for study and application of wastewater treatment plant for Abou Zabel Factory for specialized chemical production, unit of Engineering development and consulting at National Research Center, 2008, 600,000 LE.
26. **Team Member:** Functionalized Membranes for Acid Catalysis, Membrane Acid Catalysis”, US Egypt Co-operation Project, Academy of Science and Technology, 2007–2010, \$60,000.

27. **Team Member:** Synthesis of hyperbranched copolymer on novel nanostructures for Polymer Electrolyte fuel cell applications, US-Egypt Science and Technology Program, \$50,000, 2010-2013.
28. **Team Member:** Development in biodiesel Production and sources, US-Egypt joint research project, 2008-2011-2013.
29. **Team Member:** Techno-Economic evaluation for developed processes for biodiesel production, NRC fund, 2010-2013.
30. **Team Member:** Production of biodiesel from Algae in selected Mediterranean Countries, ENBI-MED, 2011-2014, 189,651 Euro.
31. **Team Member:** Building a pilot solar integrated complex to produce water, electricity, food and salt for communities, the Egyptian Science and Technology development Fund (STDF), 950,000 LE, (2013-2015).
32. **Team Member:** Use of Egypt Natural Resources to Produce Biodiesel for Jet Fuel Blend" STDF Fund (2013- 2017).
33. **Team Member:** Corrosion and corrosion protection for alloys used in water desalination station, NRC, 2013-2015, 1250000.
34. **Team Member:** The renewable energy research laboratories for academic & industrial purposes, the Egyptian Science and Technology development Fund (STDF)- capacity building. **4,000,000 LE**, 2010.
35. **Team Member:** Development of polymer electrolyte membrane for fuel cell application using direct oxidation methanol fuel cell, the Egyptian Science and Technology development Fund (STDF). **950,000 LE**, 2014-2016.
36. **Team Member:** Development and technical evaluation of conducting polymers/inorganic nanocomposite membranes for fuel cells Applications. STDF Fund (2013- current), **450,000LE**.
37. **Team Member:** Biodiesel production from microalgae in stabilization pond in wastewater treatment, NRC, **150,000 LE**, 2013-2016.
38. **Team Member:** Design and Implementation of a prototype unit for biodiesel production, NRC, **150,000 LE**, 2013-2016.
39. **Team Member:** Facial synthesis of highly reactive facet of TiO<sub>2</sub> and carbon based counter electrode for solar cells application and solar fuel, NRC, **150,000 LE**, 2017-2020.
40. **Team Member:** Extraction of Bioactive Compounds from Microalga, NRC, **150,000 LE**, 2017-2020.