

Mohammad Ali Abdelkareem

Sustainable and Renewable Engineering Department, University of Sharjah, UAE

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Professional Profile

PhD and postdoctoral fellowships:

Dr. Mohammad spent 7 years in one of the pioneer labs in Japan in the field of electrochemical energy devices, i.e., fuel cells. During his PhD study, Dr Mohammad developed a novel electrode structure for Direct Methanol Fuel Cell (DMFC), thereby; the methanol concentration which can be used efficiently in DMFC has been increased from 7 to 100 weight%. Moreover during the PhD study he has investigated all the parameters affecting the performance of this novel type of fuel cells.

After his PhD study, he got a postdoctoral fellowship for the fabrication of a complete passive fuel cell stack operated with high methanol concentration based on this novel electrode structure. During this project, all the parameters affecting the actual operation of this type of fuel cells has been investigated and with the cooperation of a specialized company in the field of fuel cell fabrication, he successfully prepared a complete 2 W passive DMFC stack operated with 90 wt% methanol. In this stack, all the membrane electrode assemblies, MEAs, were prepared by him and supplied for the company to be fixed in the stack.

As the high cost of the electrodes of the direct methanol fuel cells is one of the main obstacles facing their commercialization, Dr Mohammad has got another postdoctoral fellowship for the preparation of cheap cathode material, i.e., oxygen reduction reaction (ORR) catalyst, to replace the current expensive platinum catalyst. Using the electrospinning as a Nanotechnological approach for the preparation of nanofibers, he has prepared polyacrylonitrile, PAN, based carbon nanofibers to replace the Pt catalyst of the cathode for the fuel cell. Moreover, Dr Mohammad has used electrospinning for the preparation of a composite nanofibers as a catalyst support, and a non-precious catalyst for the direct alcohol fuel cells. During this period, Dr Mohammad got very good experience in the different electrochemical techniques used for the evaluation of the different prepared materials as well as the electrospinning.

Due to the superior electrical properties of the metal carbides and nitrides of group 5 and 6, Dr Mohammad has applied and got the JSPS fellowship in Japan for the preparation of nanosized metal carbides and nitrides of these two groups for the application in the electrodes of the fuel cells. Although of the short time, he succeeded in the preparation of Tungsten carbide nanofibers as a promising electrode material for the application in the direct methanol fuel cells.

Dr Mohammad back to Egypt at the end of 2012 where he worked as an assistant professor for around one year then he promoted the associate professor in October 2013. During this period Dr Mohammad built up two pioneer labs in the field of the Solid Oxide Fuel Cells and Microbial Fuel Cells.

Right now Dr Mohammad work as an Associate Professor in the Sustainable and Renewable Energy Engineering Department, University Sharjah, UAE.

During these studies, Dr Mohammad has got strong experience in:

1. Fuel cell fabrication from electrodes, anode and cathode, and the membrane electrode assembly, MEA. The evaluation of the different materials Ex-Situ and In-Situ. Using the three electrode cell structure and the MEA assembly in the actual fuel cell application
2. Using of the different electrochemical techniques for the evaluation of the different prepared catalyst such as cyclic voltammetry, and impedance as well as other common electrochemical techniques.
3. The analysis of the XRD, FE-SEM, XPS and FE-TEM for the characterization of the different prepared materials.
4. Professional in using the electrospinning for the fabrication of the nanofibers of the different materials and composites. Moreover, using the sol. Gel. method for the preparation of the nanoparticles.

Current research:

Dr Mohammad currently supervise several master students

1. Development of nanosized catalyst, i.e, nanoparticles, nanofibers and graphene, for the application in DMFC, Urea fuel cells, microbial fuel cell, and solid oxide fuel cell.
2. The application of the nanosized materials in the Hydrogen release.
3. Development of an integrated system for electricity production from biogas and solid oxide fuel cell.

Projects:

Dr Mohammad is involved in different national and international projects for the developments of fuel cells:

- 1) Consultant in KSA in the project entitled "Development and commercialization of fuel cells based on industrial and sewage waters using nanotechnological approach", funded by The National Plan for Sciences & Technology (NPST), King Saud University, Saudi Arabia (February 1, 2014 – January 31, 2016) (Project # 11ENE1917-02).
- 2) Consultant in KSA in the project entitled "Non-Precious Metallic Nanofibers As Novel, Cheap and Effective Electrodes For Scaling Up Fuel Cells Manufacturing Technology", funded by The National Plan for Sciences & Technology (NPST), King Saud University, Saudi Arabia (February 1, 2012 – January 31, 2014) (Project # 11ENE1721-02).
- 3) Principal investigator (PI) in national project for electricity production from wastes using an integrated system from Biogas and Solid Oxide Fuel Cells funded by the Academy of Scientific Research and Technology (ASRT).
- 4) PI of an international project funded from the European Union for the development of the microbial fuel cell for the simultaneous electricity generation and wastewater treatment.
- 5) PI of SEED grant "Development of urea fuel cell for simultaneous wastewater treatment and electricity generation" 2016-2017.
- 6) Co-PI in a project of "Development of Systematic Algorithm for the Production of Synthetic Natural Gas for Vehicles (SNGV) from Biomass", competitive research project, 2016-2018.
- 7) Co-PI in a project of "Reduced Graphene Oxide-based Double Layer Capacitor for Alternating Current Line Filtering Application", target research project, 2016-2018.

Establishment of laboratories:

During 2013-2015, Dr Mohammad used the available funds from the different projects in the preparation of two advanced laboratories for the preparation of the different nano-catalysts for the application in the different types of the fuel cells and their electrochemical evaluation.

Career Summary

June, 1999- Jan., 2000

Chemical Engineer, Egyptian Fertilizer Company

Feb., 2000-March, 2002

Demonstrator, El-Minia University, Faculty of Engineering, Chemical Engineering Department, Egypt

April, 2002- Dec., 2004

Teaching Assistant, El-Minia University, Faculty of Engineering, Chemical Engineering Department, Egypt

July, 2008- Jan., 2009

Lecturer, El-Minia University, Faculty of Engineering, Chemical Engineering Department, Egypt

Feb., 2008- March, 2011

Post doctor fellowship in Advanced Technology Center (ATEC), Gunma University, Gunma, Japan

June, 2011- March, 2012

Researcher in Graduate school of Eng., Gunma University, Gunma, Japan

April, 2012 – March 2013

JSPS fellowship in Gunma University, Gunma, Japan

Oct., 2013 - Aug. 2015

Associate Professor, , El-Minia University, Faculty of Engineering, Chemical Engineering Department, Egypt

Now

Sep. 2015 till now

Associate Professor, University of Sharjah, Faculty of Engineering, Sustainable and Renewable Energy Engineering Department, UAE

Awards

1. National scholarship for PhD study in Japan, Dec. 2004 to June 2008.
2. Postdoctoral fellowship for the development of DMFC based on novel electrode structure. From the advanced technology Center, Gunma university Japan. Feb., 2009 to March 2011.
3. Postdoctoral fellowship for the development of cathode alternatives to the Pt catalyst. April 2001 to March, 2012.
4. Postdoctoral fellowship from April 2012 to Dec. 2012, Japan for the development of metal carbides and Nitrides for fuel cell applications.

Best presented Paper

Second International Conference for Energy, ICEE2010, Aswan, Egypt 27-29 Dec., 2010.

Title of the paper

Role of Air Cathode Filter on the Intermediate Products in a Vapor Feed Passive DMFC Operated with High Methanol Concentration.

Minia University scientific reward for publishing, 2014 and 2015.

State price in advanced Engineering Applications 2015.

جائزة الدولة التشجيعية في التطبيقات الهندسية ٢٠١٥

Education

Ph.D. Degree: June, 2008 (Gunma University, Japan)

Ph.D. Degree in Fuel cells under the title "Novel Electrode Structure for the Reduction of Methanol Crossover in a Passive DMFC

"M.Sc. Degree: May, 2002 (El-Minia University, Egypt)

M.Sc. Degree in Chemical Engineering, under the thesis title "Evaluation of Pack Aluminizing of Steel in Various Corrosive Media".

B.Sc. Degree: May, 1998 (El-Minia University, Egypt) B.Sc., Chemical Engineering Final year grade (Distinction, 90.5%), The average grade (Very good with honors degree, 78%)

Visiting professor:

1. Chonbuk National University, College of Engineering, Organic Materials and Fiber Engineering Dept., South Korea, in the period 22/03/2012 to 21/04/2012.

2. Chonbuk National University, College of Engineering, Organic Materials and Fiber Engineering Dept., South Korea, in the period 11/01/2013 to 08/02/2013.
 3. King Saud University, faculty of Science, KSA, in the period 20/01/2013 to 08/02/2013.
 4. King Saud University, faculty of Science, KSA, in the period 20/12/2013 to 27/12/2013.
 5. Ningbo institute of material technology and Engineering, Division of Fuel cell and energy technology, Chinese academy of Science, China, in the period 14/02/2014 to 23/02/2014.
 6. King Saud University, faculty of Science, KSA, in the period 01/02/2015 to 08/02/2015.
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Referee in the following journals:

1. Chemical Engineering Journal.
2. Sustainable Chemistry & Engineering
3. Advanced Composite Materials.
4. Applied Catalysis A.
5. African Journal of Environmental Science and Technology
6. Material letters
7. Industrial and Engineering Chemistry
8. Energy Technology
9. Journal of electro-analytical Chemistry
10. Applied Surface science

Teaching experience:

Under Graduate courses:

1. Introduction to Energy Science and Technology.
2. Fuel Cells.
3. Fluid Mechanics.
4. Principals of Chemical Engineering.
2. Fundamentals of Biochemical Engineering.
3. New and Renewable Energy.
4. White Cement Industry.
5. Equipment design for industrial wastes recycling.
6. Organic Engineering Industries.
7. Chemical Engineering for biomedical applications.
8. Electrochemical Engineering and Corrosion.
9. Principals of Chemical Industries.
10. Fluid and Heat Transfer.
11. Engineering Thermodynamics
12. Fluid Mechanics Lab.
13. Wind Energy System Lab.

Postgraduate courses:

1. Biological Processes for Pollution Removal
2. Energy polices and Economics
3. Hydrogen production and storage
4. Bioenergy technology

Publications

International journals:

1. N. Nakagawa, K. Kamata, A. Nakazawa, **M. A. Abdelkareem**, K. Sekimoto, "Methanol crossover controlled by a porous carbon plate as a support", *Electrochemistry*, 74, 221-225 (2006).
2. N. Nakagawa, **M. A. Abdelkareem**, K. Sekimoto, "Control of methanol transport and separation in a DMFC with a porous support", *Journal of Power Sources*, 160, 105-115 (2006).
3. **M. A. Abdelkareem**, N. Nakagawa, "DMFC employing a porous plate for an efficient operation at high methanol concentrations", *Journal of Power Sources*, 162 (2006) 114-123.
4. **M. A. Abdelkareem**, N. Nakagawa, "Effect of oxygen and methanol supply modes on the performance of a DMFC employing a porous plate", *Journal of Power Sources*, 165, 685-691(2007).
5. **M. A. Abdelkareem**, N. Morohashi, and N. Nakagawa, "Factors affecting methanol transport in a passive DMFC employing a porous carbon plate", *Journal of Power Source* 172 (2007) 659-665.
6. T. Nakazato, N. Hirao, **M. A. Abdelkareem**, A. Nakazawa, and N. Nakagawa, "Methanol Diffusion through a Porous Plate in Anode Backing of a Passive Direct Methanol Fuel Cell under Closed Circuit Conditions", *Journal of Chemical Engineers of Japan*, 40 (2007) 1108-1112.
7. N. Nakagawa, **M. A. Abdelkareem**, "The role of carbon dioxide layer prepared by a porous carbon plate in a passive DMFC as a mass transport barrier", *Journal of Chemical Engineers of Japan*, 40 (2007) 1199-1204.
8. **M. A. Abdelkareem**, T. Yoshitoshi, T. Tsujiguchi and N. Nakagawa, "Vertical operation of passive DMFC employing a porous carbon plate", *Journal of Power Sources*, 195 (2010) 1821-1828.
9. T. Tsujiguchi, **M. A. Abdelkareem**, T. Kudo and N. Nakagawa, T. Shimizu, M. Matsuda, "Development of a passive DMFC stack for high methanol concentration", *Journal of Power Sources*, 195 (2010) 5975-5979.
10. **M. A. Abdelkareem**, T. Tsujiguchi and N. Nakagawa, "Effect of black catalyst ionomer content on the performance of passive DMFC", *Journal of Power Sources*, 195 (2010) 6287-6293.
11. **M. A. Abdelkareem**, and N. Nakagawa, "A key factor for the actual application of a vapor feed passive DMFC operated with high concentration of methanol", *Key Eng. Materials*, 459 (2011) 78-83.
12. N. Nakagawa, **M. A. Abdelkareem**, D. Takino, T. Ishikawa, and T. Tsujiguchi, "PAN based carbon nanofibers as an active ORR catalyst for DMFC" *Electrochemical society, ECS Transactions*, 41 (1) 2219-2229 (2011).
13. **M. A. Abdelkareem**, D. Takino, T. Ishikawa, T. Tsujiguchi and N. Nakagawa, "PAN based carbon nanofibers as an active ORR catalyst", *J. Key Eng. Material*, 497(2012) 73-79.
14. Yousef, N. A. M. Barakat, T. Amna, **M. A. Abdelkareem**, A. R. Unnithan, S. S. Aldeyab and H. Y. Kim, Activated Carbon/Silver-Doped Polyurethane Electrospun Nanofibres: Single Mat for Different Pollutants Treatment, *Macromolecular Research*, 20 (2012) 1243-1248.
15. M. H. Gabr, N. T. Phong, **M. A. Abdelkareem**, K. Okubo, K. Uzawa, I. Kimpara, and T. Fujii, Mechanical, thermal, and moisture absorption properties of nano-clay reinforced nano-cellulose biocomposites, *Cellulose* (2013) 20:819–826.
16. **M. A. Abdelkareem**, Y. Ito, T. Tsujiguchi, and N. Nakagawa, Carbon-TiO₂ Composite Nanofibers as a Promising Support for PtRu Anode Catalyst of DMFC, *ECS Trans.* 2013 50(2): 1959-1967.
17. N. A.M. Barakat, **M. A. Abdelkareem**, A. Yousef, S. S. Al-Deyab, M. El-Newehy, and H. Y. Kim, Cadmium-doped cobalt/carbon nanoparticles as novel nonprecious electrocatalyst for methanol oxidation, *international journal of hydrogen energy* 38 (2013) 3387- 3394.
18. N. A.M. Barakat, **M. A. Abdelkareem**, H. Y. Kim, Ethanol electro-oxidation using cadmium-doped cobalt/carbon nanoparticles as novel non precious electrocatalyst, *Applied Catalysis A: General* 455 (2013) 193– 198.
19. N. A.M. Barakat, **M. A. Abdelkareem**, G. Shin, and H. Y. Kim, Pd-doped Co nanofibers immobilized on a chemically stable metallic bipolar plate as novel strategy for direct formic acid fuel cells, *international journal of hydrogen energy*, 38 (2013) 7438-7447
20. C. Feng; T. Takeuchi; **M. A. Abdelkareem**, T. Tsujiguchi, N. Nakagawa, Carbon-CeO₂ Composite Nanofibers as a Promising Support for a PtRu Anode Catalyst in a DMFC, *J. Power Sources* 242 (2013) 57–64.

21. Y. Ito; T. Takeuchi; T. Tsujiguchi, **M. A. Abdelkareem**, N. Nakagawa, Ultrahigh MOR activity of PtRu nanoparticles prepared on TiO₂-embedded carbon nanofiber support, *J. Power Sources* 242 (2013) 280–288.
22. N. A. M. Barakat, **M. A. Abdelkareem**, M. El-Newehy, H. Y. Kim, Influence of the nanofibrous morphology on the catalytic activity of NiO nanostructures: an effective impact toward methanol electrooxidation, *Nanoscale Research Letters* (2013), 8:402.
23. T. Ishikawa, **M. A. Abdelkareem**, T. Tsujiguchi and N. Nakagawa, Tungsten Carbide Nanofiber Prepared by Electrospinning for Methanol Oxidation Reaction, *Key Engineering Materials* Vol. 596 (2014) 55-59.
24. E. A. M. Abdelghany, **M. A. Abdelkareem**, I. H Mahmoud, Behavior of Ultrafine versus Superfine Powders in a Binary-Mixture Semi-Batch Circulating Fluidized Bed, *J. Chemical Engineering & Technology* 37 (2014) 723-729.
25. **M. A. Abdelkareem**, M. S. Masdar, T. Tsujiguchi, N. Nakagawa, E. T. Sayed, N. AM Barakat, Elimination of toxic products formation in vapor-feed passive DMFC operated by absolute methanol using air cathode filter, *Journal of Chemical Engineering* 240 (2014) 38-44
26. **M. A. Abdelkareem**, E. T. Kasem, N Nakagawa, E. A. M. Abdelghani, A. A. Elzatahry, K. A. Khalil, N. A. M. Barakat, Enhancement of the Passive Direct Methanol Fuel Cells Performance by Modification of the Cathode Microporous Layer Using Carbon Nanofibers, *Fuel Cells*, Vol. 14 (2014), Pages 607–614.
27. B. M. Thamer, M. H. El-Newehy, N. A.M. Barakat, **M. A. Abdelkareem**, S. S. Al-Deyab, H. Y. Kim, Influence of Nitrogen doping on the Catalytic Activity of Ni-incorporated Carbon Nanofibers for Alkaline Direct Methanol Fuel Cells, *Electrochimica acta* Vol. 142 (2014), Pages 228–239.
28. NAM Barakat, M Motlak, MM Nassar, **M. A. Abdelkareem**, MS Mahmoud, From Secondary to Primary Role in Alkaline Fuel Cells: Co-Decorated Graphene as Effective Catalyst for Ethanol Oxidation *ECS Electrochemistry Letters* 4 (2015) F5-F8.
29. N.A.M Barakat, E. Ahmed, **M.A. Abdelkareem**, T. E. Farrag, S. Al-Meer, S. Al-Deyab, K. Elsaid, M. M. Nassar, Ammonium phosphate as promised hydrogen storage material , *J. Hydrogen Energy* 40 (2015) 10103-10110.
30. E. T. Sayed, N. A. M. Barakat , **M. A. Abdelkareem**, H. Fouad, N. Nakagawa, Yeast extract as an effective and safe mediator for the baker's-yeast-based microbial fuel cell, *Industrial and Engineering Chemistry Research*, 54 (2015) 3116-3122.
31. B. M. Thamer, M. H. El-Newehy, S. Al-Deyab, **M. A. Abdelkareem**, H. Y. Kim, N. A. M. Barakat, Cobalt-incorporated, nitrogen-doped carbon nanofibers as effective non-precious catalyst for methanol electrooxidation in alkaline medium, *Applied Catalysis A: General*, 498 (2015) 230-240.
32. A. Yousef, , R. M. Brooks, **M. A. Abdelkareem**, J. A. Khamaj, M. H. El-Halwany, N. A. M. Electrospun NiCu nanoalloy decorated on carbon nanofibers as chemical stable electrocatalyst for methanol oxidation, *ECS Electrochemistry Letters* 4 (2015) F51-F55.
33. A. Yousef, R. M. Brooks, M.M. El-Halwany, **M. A. Abdelkareem**, J. A. Khamaj, M. H. EL-Newehy, N. A. M. Baraka , H. Y. Kim, Fabrication of Electrical Conductive NiCu– Carbon Nanocomposite for Direct Ethanol Fuel Cells, *Int. J. Electrochem. Sci.*, 10 (2015) in press.
34. N.AM Barakat, E.Ahmed, **M. A. Abdelkareem**, AA Farghali, MM Nassar, M. H El-Newehy, S. S Al-Deyab, Ag, Zn and Cd-doped titanium oxide nanofibers as effective photocatalysts for hydrogen extraction from ammonium phosphates, *Journal of Molecular Catalysis A: Chemical* 409 (2015) 117-126.
35. B. M Thamer, M. H El-Newehy, N. AM Barakat, **M. A. Abdelkareem**, S. S Al-Deyab, H. Y. Kim, In-situ synthesis of Ni/N-doped CNFs-supported graphite disk as effective immobilized catalyst for methanol electrooxidation, *J. Hydrogen Energy* 40 (2015) 14845-14856.
36. N. AM Barakat, H. M Moustafa, MM Nassar, **M. A. Abdelkareem**, MS Mahmoud, A. A Almajid, K. A. k Khalil, Distinct influence for carbon nano-morphology on the activity and optimum metal loading of Ni/C composite used for ethanol oxidation, *Electrochimica acta* 182 (2015), Pages 143–155.
37. A. Allagui, **M. A. Abdelkareem**, A. Alwakil, H. Alawadi, Reduced Graphene Oxide Thin Film on Conductive Substrates by Bipolar Electrochemistry, *Scientific Reports*, 6 (2016) 21282.
38. A. Allagui, A. E. Rojas, T. Bonny, A. S. Elwakil, and **M. A. Abdelkareem**, Nonlinear time-series analysis of current signal in cathodic contact glow discharge electrolysis, *J. of applied physics* 119(2016) 203303.
39. **M. A. Abdelkareem**, A. Allagui, T. Tsujiguchi, N. Nakagawa, Effect of the Ratio Carbon Nanofiber/ Carbon Black in the Anodic Microporous Layer on the Performance of Passive Direct Methanol Fuel Cell, *J. Electrochem. Soc.* 163 (2016) F1011-F1016.

40. Allagui, J. M. Ashraf, M. Khalil, **M. A. Abdelkareem**, A. S. Elwakil, H. Alawadh, All-Solid-State Double-Layer Capacitors Using Binderless Reduced Graphene Oxide Thin Films Prepared by Bipolar Electrochemistry, *ChemElectroChem* 4 (2017) 1-8.
41. H. O. Mohamed, **M. A. Abdelkareem**, M. Obaid, S. Chae, M. Park, H. Y. Kim, N. A.M. Barakat, Cobalt Oxides-Sheathed Cobalt Nano flakes to Improve Surface Properties of Carbonaceous Electrodes Utilized in Microbial Fuel Cells, *Journal Chemical Engineering*, in press.

International Conference:

1. M. A. Abdelkareem, Kazuya Sekimoto, Nobuyoshi Nakagawa, "Methanol Crossover Through a Passive DMFC Using Porous Support", 4th International Fuel Cell Workshop 2005, Kofu, Yamanashi, Japan (Sep. 23-24, 2005).
2. M. A. Abdelkareem, N. Nakagawa; "DMFC performance at high methanol concentrations" battery symposium, The 47th Battery Symposium in Japan 20-22 Nov. 2006, Tokyo.
3. R. Shinpei, S. Shinichi, Y. Tetsuya, A. Masaharu, I. Hiroshi, M. A. abdelkareem, N. Nakagawa, S. Akira, T. Takayuki, M. Yasunari, Performance Evaluation of a DMFC using a "cross-linked polytetrafluoroethylene membrane, 47th battery symposium, 20 to 22 Nov. 2006, Tokyo.
4. M. A. Abdelkareem, H. Naoya, N. Nakagawa, The Effect of Using Porous Plate on the Performance of Passive DMFC, *electrochemical 73 Annual Conference*, 1P32, 1 to 3 April , 2006, Tokyo Metropolitan University, Japan.
5. N. Nakagawa, M. A. AbdelKareem, High concentration methanol crossover operation and reduction through the use of a porous plate, 13th Fuel Cell Symposium, May 16 to 17, B35, 2006, Tower Hall Funabori, Tokyo, Japan.
6. Nobuyoshi Nakagawa, M. A. Abdelkareem, "The role of Carbon Dioxide Layer Prepared by a Porous Carbon Plate in a Passive DMFC as a Mass Transport Barrier", *International Symposium on Innovative Materials for Processes in Energy Systems, IMPRES*, 28-31 October, 2007, Kyoto Research Park, Kyoto, Japan, Oral
7. M. A. Abdelkareem, Nobuyoshi Nakagawa, "Methanol Transport in a Passive DMFC Employing a Porous Carbon Plate", 2007 AIChE Annual Meeting, Nov. 4-9, 2007, Salt Lake City, Utah, Oral.
8. Nobuyoshi Nakagawa, M. A. Abdelkareem, "Role Of Carbon Dioxide Layer To Increase Energy Density Of A Passive Dmfc", *Power MEMS 2007*, Nov. 28-29, Freiburg, Germany, poster.
9. M. A. Abdelkareem, Nobuyoshi Nakagawa, "DMFC performance at high methanol concentrations", The 47th Battery Symposium in Japan, 1B-25, November 20-22, Tokyo
10. T. Tsujiguchi, M. A. Abdelkareem, T. Yoshitoshi, N. Nakagawa, T. Shimizu, M. Sato, M. Matsuda, "Development of a 2W passive DMFC with the novel electrode structure and its performance with high concentration methanol", 2008 Fuel cell seminar & Exposition, Phoenix, Arizona, U.S.A., Oct. 27-31, 2008.
11. T. Tsujiguchi, M. A. Abdelkareem, T. Yoshitoshi, N. Nakagawa, T. Shimizu, M. Sato, M. Matsuda, "Fabrication of a 2W passive DMFC operating with high concentration methanol" *PowerMEMS 2008+μEMS 2008*, Sendai, Japan, Nov. 9-12 2008
12. T. Yamaki, S. Kawahito, S. Sawada, M. Asano, H. Ishiguro, M. A. Abdelkareem, N. Nakagawa, T. Terai, Y. Maekawa, M. Yoshida, "DMFC performance of Crosslinked Polytetrafluoroethylene-Based Radiation-Grafted Electrolyte Membranes", *PBFC 2009*, 4th International Conference on Polymer Batteries and Fuel Cells, 2P-03, Yokohama, Japan, August 2-6, 2009.
13. T. Tsujiguchi, M.A. Abdelkareem, T. Kudo, N. Nakagawa, T. Shimizu, M. Matsuda, " Development of a Vertically Arranged Passive DMFC Stack Using 100% Methanol", *PBFC 2009*, 4th International Conference on Polymer Batteries and Fuel Cells, 2P-49, Yokohama, Japan, August 2-6, 2009.
14. M. A. Abdelkareem, T. Yoshitoshi, T. Tsujiguchi, N. Nakagawa, "Vertical operation of passive DMFC employing a porous carbon plate", *PBFC 2009*, 4th International Conference on Polymer Batteries and Fuel Cells, 2P-44, Yokohama, Japan, August 2-6, 2009.
15. T. Tsujiguchi, M. A. Abdelkareem, T. Kudo, N. Nakagawa, T. Shimizu, M. Matsuda, "Influence of ambient air condition on the power generation characteristics of a passive DMFC with 100% methanol", *International Fuel Cell Workshop 2009*, Kofu, Japan, Aug. 23-24, 2009.
16. M. A. Abdelkareem, N. Nakagawa, "A key factor for the actual application of a vapor feed passive DMFC operated with high concentration of methanol", *First international Conference on Advanced Micro-Device Engineering, AMDE*, December 10-11, 2009.

17. M. A. Abdelkareem, Nobuyoshi Nakagawa, "Properties of the porous carbon plate for the implementation of micro DMFC", Annual conference of ATEC, KP-16, march, 16, 2009.
18. M. A. Abdelkareem, D. Takino, T. Ishikawa, T. Tsujiguchi and N. Nakagawa, "PAN based carbon nanofibers as an effective cathode catalyst for DMFC", Second international Conference on Advanced Micro-Device Engineering, AMDE, December 9-10, 2010.
19. M. A. Abdelkareem, M. S. Masadar, T. Tsujiguchi, and N. Nakagawa, Role of Air Cathode Filter on the Intermediate Products in a Vapor Feed Passive DMFC Operated with High Methanol Concentration, Second International Conference, ICEE 2010, Aswan, Egypt, Dec., 27-29.
20. M. A. Abdelkareem, T. Tsujiguchi, and N. Nakagawa, Effect of CNF Addition into Anodic MPL on the Performance of Passive DMFC, Second International Conference, ICEE 2010, Aswan Dec., 27-29.
21. M. A. Abdelkareem, T. Tsujiguchi, and N. Nakagawa, NiO nanofibers as an active catalyst for methanol oxidation, The 52nd Battery Symposium in Japan, International session, October, 17-20, 2011, Tokyo, Japan.
22. T. Ishikawa, M. A. Abdelkareem, D. Takino, T. Tsujiguchi, and N. Nakagawa, Effect of steam activation on the ORR activity of carbon alloy nanofiber catalysts, The 52nd Battery Symposium in Japan, International session, October, 17-20, 2011, Tokyo, Japan.
23. M. A. Abdelkareem, T. Tsujiguchi, N. Nakagawa, TiO₂ and Carbon-TiO₂ Nanofibers as ORR Active Catalyst, The 62nd Annual Meeting of the International Society of Electrochemistry, 11-16 September, Niigata (Japan), (2011).
24. N. Nakagawa, M. A. Abdelkareem, D. Takino, T. Ishikawa, and T. Tsujiguchi, PAN based carbon nanofibers as an active ORR catalyst for DMFC, 220th ECS Meeting, 2011 The Electrochemical Society, Oct. 6-14, 2011, Boston (USA), (2011).
25. D. Takino, T. Ishikawa, M. A. Abdelkareem, T. Tsujiguchi and N. Nakagawa, Preparation of carbon alloy nanofibers for the catalyst of DMFC, The First International Symposium on Element Innovation, Kiryu (Japan), (2011).
26. M. A. Abdelkareem, T. Tsujiguchi and N. Nakagawa, TiO₂ and Carbon-TiO₂ Nanofibers as ORR Active Catalyst, The First International Symposium on Element Innovation, Kiryu (Japan), (2011).
27. M. A. Abdelkareem, M. S. Mahmoud, M. R. O. Ali, F. A. Hammad, N.A.M. Barakat, and I. A. Ashour, Cobalt-Doped Carbon nanofibers as an Effective ORR Catalyst, Proceedings of EFC2015, European Fuel Cell Technology & Applications Conference - Piero Lunghi Conference, December 16-18, 2015, Naples, Italy.
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