Curriculum Vitae

Dr/ Mohamed A. Ghanem

Nationality: British

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Biography

* Obtained PhD (1998-2002) from University of Southampton (UK) in field of synthesis, characterizations and applications of nanostructured materials. Spent 7 years postdoctoral researcher between Southampton and Bath University with Prof. Phil Bartlett and Frank Marken research groups. I join KSU in 2012 as Associate Prof. of physical chemistry and my research interests focusing on porous and nanomaterials, electrochemical methods, electro- and photo-catalysts, high throughput electrochemistry, surface modification, biosensors and nanotechnology. The publications about 60 papers, 4 patents and gave about 15 conference presentations and supervised about 8 master and PhD students.

# Research Interests and knowledge

# Strong knowledge in fabrication and characterization of porous nanomaterials and applications. Physical chemistry, electrochemistry, catalysis, biosensors, surface modification, photocatalysts and high throughput. My research interests are focused on electrochemical methods, templated synthesis of nanostructured materials, electrocatalysts, high throughput electrochemistry, surface modification, microelectrodes, biosensors and nanotechnology. I have extensive experience in surface modification, templated electrodeposition of nanostructured thin films, the characterization and application of nanostructured materials, modified electrodes, conducting polymer and nanowires devices. I also have strong background in electrodeposition of metals, alloys, oxides, semiconductors, and the deposition of conducting polymers.

# Employment History:

**Sept. 2012 on-going:** Associate Professor of physical chemistry Department, King Saud University, KSA.

**Sept. 2006- Nov 2011:** Senior research fellow at Chemistry Dept., University of Southampton, UK

**Feb 2005- Aug 2006**: PDRA at the Chemistry Dept., University of Bath, UK

**Oct 2003- Jan 2005**: PDRA at School of Physics & Astronomy, University of Southampton.

**Aug 2002- Sept 2003**: PDRA at the Chemistry Dept., University of Southampton, UK

**1998- 2002**: PhD in Chemistry, at Chemistry Dept., University of Southampton.

# Qualifications:

1998- 2002: PhD in Physical Chemistry, Chemistry Department, University of Southampton.

1992- 1994: M.Sc. in Chemistry at Faculty of Science, Suez Canal University – Egypt.

1985- 1989: B.Sc. in Chemistry at Faculty of Science, Suez Canal University – Egypt.

**Funded Project:**

1. **PI- Project Title:** Synthesis of Nanostructured Mesoporous Ion exchange Materials by Precipitation using Liquid Crystal Templates and Application in Water Treatment Funded by King Abdulaziz City for Science and Technology (KACST) start in 2015-2016.
2. **PI-Project Title:** Synthesis and characterization of novel multifunctional mesoporous nanocatalysts for improved hydrocarbon oxidation and fuel-cell applications. Funded by Funded by NPST, King Saud University-2016. In collaboration with Frank Marken, university of Bath.
3. **PI-Project Title:** Screening and characterization of new photocatalytic materials for solar water-splitting hydrogen production. Funded by Funded by NPST, King Saud University-2016. In collaboration with Mark Weller, university of Bath.

**Patent Application:**

1- “Surface plasmon optical devices and methods”, Patent UK No. 0028589.0, M.Caterina Netti, Steve Coyle, Jeremy J. Baumberg, Mohamed A. Ghanem and Phil N. Bartlett.

2- “Materials Nano-pattering using double templated electrodeposition” Mohamed A. Ghanem, Phil N. Bartlett, P.A.J.de Groot and A.A.Zhukov, patent application GB 0310498.1.

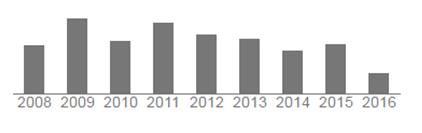
3- “Method for synthesizing Platinum NP incorporated on silica” Nezar H. Khdary, Mohamed A Ghanem, US patent no: 2015/0191835A1, Date : 9 July 2015.

4- “Electrochemical method of production of hydrogen peroxide” Mohamed A Ghanem, Abdullah M Almayouf, Maged N Shaddad, KSU, Disclosure ID: 04201400525.

**Recent Publications:**

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| 66- Concurrent Deposition and Exfoliation of Nickel Hydroxide Nanoflakes Using Liquid Crystal Template and Their Activity for Urea Electrooxidation in Alkaline Medium, M. A. Ghanem, A. M. Al-Mayouf, J. P. Singh, P. Arunachalam, Electrocatalysis, 2016, DOI 10.1007/s12678-016-0336-8. |
| 65- Development of Conducting Poly(o-Aminophenol) Film and its Capacitance Behavior, M. A. Ghanem, G. El-Enany, Int. J. Electrochem. Sci., 11 (2016) accepted. |
| 64- Synthesis and Characterizations of Titanium Tungstophosphate Nanoparticles for Heavy Metal Ions Removal, M. A. Ghanem1, N. H. Khdary, A. M. Almayouf, M. A. Salah, Solid State Phenomena, 257, 187-192 (2017). |
| 63- Cooperative Catalytic Effect of ZrO2 and α-Fe2O3 Nanoparticles on BiVO4 Photoanodes for Enhanced Photoelectrochemical Water Splitting, M. N. Shaddad, M. A. Ghanem, A. M. Al-Mayouf, S. Gimenez, J. Bisquert, I. Herraiz-Cardona, CHEMsusCHEM, 2016, 9, 2779-2783. DOI: 10.1002/cssc.201600890 |
| 62- Sequestration of CO2 using Cu nanoparticles supported on spherical and rod-shape mesoporous Silica,  N. H Khdary, M. A. Ghanem, M. E. Abdesalam, M. AL-Garadah, J. Saudi Chem. Soc., 2016, doi:10.1016/j.jscs.2016.05.004 |
| 61- Mesoporous cobalt hydroxide prepared using liquid crystal template for efficient oxygen evolution in alkaline media, M. A. Ghanem, A.M.Al-Mayouf, P. Arunachalam, T.Abiti, Electrochimica Acta 207 (2016) 177–186 , doi:10.1016/j.electacta.2016.04.172 |
| 60- Efficient Bi-Functional Electrocatalysts of Strontium Iron Oxy-Halides for Oxygen Evolution and Reduction Reactions in Alkaline Media, Mohamed A. Ghanem, Prabhakarn Arunachalam, Abdullah Almayouf, Mark T. Weller, J. Electrochem. Soc. 2016 volume 163, issue 6, H450-H458. |
| 59- Photoelectrochemical oxidation of water using La(Ta,Nb)O2N modified electrodes, P Arunachalam, A Al-Mayouf, MA Ghanem, MN Shaddad, MT Weller, Inter. J. Hydrogen Energy, 2016, 11644–11652 |
| 58- Electrodeposition and Characterization of Mesoporous Nanostructured Cobalt Films using Brij78 Templated, M.A. Ghanem I.S. El-Hallag, , Journal of New Materials for Electrochemical Systems 18, 165-168 (2015). |
| 57- Capacitance properties of electrodeposited polyaniline films on stainless steel substrate, A.A. Al-Owais, I.S. El-Hallag, M.A. Ghanem, E.H. El-Mossalamy, Journal of New Materials for Electrochemical Systems, 18 (2015) 17-20. |
| 56- Selective formation of hydrogen peroxide by oxygen reduction on TiO2 nanotubes in alkaline media, Mohamed A. Ghanem, Abdullah M. Al-Mayouf, Maged N. Shaddad, Frank Marken, Electrochimica Acta 174 (2015) 557–562. |
| 55- Mesoporous nickel/nickel hydroxide catalyst using liquid crystal template for ethanol oxidation in alkaline solution, Mohamed A. Ghanem, Abdullah M. Al-Mayouf , Jai P. Singh, Twaha Abiti, Frank Marken, J. Electrochem. Soc. 162 (7) 2015, H453-H459; doi: 10.1149/2.0441507jes. |
| 54- Chemical Deposition of Nickel Platinum Alloy on the Surface of TiO2 Nanotubes as a Catalyst for Methanol Oxidation, MA Ghanem, A M Al-Mayouf, MN Shaddad, MS. Alhoshan, MN Al-Shalawi, Int. J. Electrochem. Sci., 10 (2015) 3680 – 3692. |
| 53- [Nickel oxide/nitrogen doped carbon nanofibers catalyst for methanol oxidation in alkaline media](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=JTGxaI4AAAAJ&sortby=pubdate&citation_for_view=JTGxaI4AAAAJ:4JMBOYKVnBMC)  AM Al-Enizi, MA Ghanem, AA El-Zatahry, SS Al-Deyab, Electrochimica Acta 137 (2014) 774-780. |
| 52- [Incorporation of Cu, Fe, Ag, and Au nanoparticles in mercapto-silica (MOS) and their CO2 adsorption capacities](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=JTGxaI4AAAAJ&sortby=pubdate&citation_for_view=JTGxaI4AAAAJ:qUcmZB5y_30C), NH Khdary, MA Ghanem, MG Merajuddine, FMB Manie, J CO2 Utilization 5 (2014) 17-23. |
| 51- [Highly dispersed platinum nanoparticles supported on silica as catalyst for hydrogen production](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=JTGxaI4AAAAJ&sortby=pubdate&citation_for_view=JTGxaI4AAAAJ:r0BpntZqJG4C)  NH Khdary, MA Ghanem, RSC Advances 4 (2014) 50114-50122. |
| 50- [A study of the modification of glassy carbon and edge and basal plane highly oriented pyrolytic graphite electrodes modified with anthraquinone using diazonium coupling and solid phase synthesis and their use for oxygen reduction](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=JTGxaI4AAAAJ&sortby=pubdate&citation_for_view=JTGxaI4AAAAJ:mVmsd5A6BfQC), I Kocak, MA Ghanem, A Al-Mayouf, M Alhoshan, PN Bartlett  J. Electroanal. Chem. 706 (2013) 25-32. |

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