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Ali Kanakhir Aldalbahi

Associate Professor in Chemistry- Polymers and Nanostructured Materials

Personal Information

Name: Ali Kanakhir Aldalbahi

Date of Birth: 24-04-1982

Major: Chemistry / Polymers and Nanostructured Materials

Marital status: Married

Nationality: Saudi

Languages: Arabic, English

Job Position

- Vice Dean for Research Affairs at King Abdullah institute for Nanotechnology.
- Associate Professor at Department of Chemistry, Collage of Science, King Saud University. Riyadh, Saudi Arabia.
- Director of Distinguished Student Program at King Saud University.

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Qualifications

- PhD in chemistry (Polymers and Nanostructured Materials) from Wollongong University .Year of graduation 2013. **Dissertation Title:** Nano-Composite Materials from Carrageenan, Conducting Polymers and Carbon Nanotubes.

- Diploma of project management from New South Wales technical and further education commission Australia. Year of graduation 2009.
- Certificate IV in project management from New South Wales technical and further education commission Australia. Year of graduation 2009.
- Master in chemistry (Polymers and Nanostructured Materials) from Wollongong University .Year of graduation 2008.
- Preparation course for tertiary studies in chemistry (two semesters +summer session) from department of chemistry, KSU, 2004/2005.
- Bachelor of chemistry from King Saud University. Year of Graduation 2003.

Committees and Administrative Roles

- Associate Professor at Department of Chemistry, Collage of Science, King Saud University. Riyadh, Saudi Arabia. From 2017 till now.
- Assistant Professor at Department of Chemistry, Collage of Science, King Saud University. Riyadh, Saudi Arabia. From 2013 till 2017.
- Vice Dean for Research Affairs at King Abdullah institute for Nanotechnology. From 2015 till now.
- Director of Distinguished Student Program at King Saud University. From 2015 till now.
- Coordinator of Organic Chemistry branch, Department of Chemistry, from 2014 till now.
- Decision of the Commission on Community Service, Department of Chemistry, from 2013 to 2014.
- Coordinator of the Graduation student Projects, Department of Chemistry, from 2013 till 2016.
- Chairman of the vocational training committee, Department of Chemistry, from 2013 till 2016.

- Member of the Master polymer committee at Department of Chemistry, from 2013 till now.
- Member of the vocational training committee, Collage of Science, KSU, from 2013 till now.
- General supervisor of the Student activities and specialized clubs, Collage of Science, KSU, from 2013 till 2015.
- Reviewers at National and International Journals (Saudi chemical society Journal, Arabian chemical Journal, Material Chemistry B).

Training and Workshops

- English Language Intensive Course for Overseas Students from Wollongong University College between 6/02/2006 and 9/02/2007.
- Skills and Confidence for Tertiary Studies Course from Wollongong University College between 7/02/2007 and 9/02/2007.
- English for Tertiary Studies course from Wollongong University College between 07/08/2006 and 13/10/2006.
- Preparation course for Tertiary Studies in chemistry from King Saud University between 15/02/2005 and 2 /01/2006.
- Microsoft Project, from New South Wales technical and further education commission Australia 2009.
- The safe use of XRD/F equipment in the laboratory (Licensing level) from BARTOLO safety management service (Wollongong, Australia) 2009.
- Safe Work Procedures training from Professional & organisation Development Service (Wollongong, Australia) 2009.
- Basic training and Introduction on how to use the TGA instruments, from Wollongong University, Australia, 2009.
- Practical training course in experimental NMR spectroscopy, from Wollongong University, Australia, 2009.

- Safe handling, storage and transport of liquid Nitrogen, from Wollongong University, Australia, 2009.
- Faculty of Science workshop for sessional staff, from Wollongong University, Australia, 2010.
- Using Google Instruments in Learning, From Deanship of Skills Development at KSU, 2014.
- Meeting your class for the first time, From Deanship of Skills Development at KSU, 2014.
- Teaching with problem solving, From Deanship of Skills Development at KSU, 2014.
- Teaching and learning, From Dalhousie University, Canada, 2014.
- Introduction to Polymer technology, From the Higher Institute for Plastics Fabrication (HIPF), KSA, 2014.
- Professional writing in higher Education: Submitting, Publishing, Editing and Reviewing, From Deanship of Skills Development at KSU, 2015.
- Teaching with problem solving, From Deanship of Skills Development at KSU, 2015.
- Quality Management System in Learning Association ISO9001:2008, From Deanship of Skills Development at KSU, 2015.
- Evaluation of skills record workshop, form Deanship of Student Affairs at KSU 2015.
- Polymer Technology, From the American Chemical Society (ACS), USA, 2015.

Conferences

- Student 4 student National leadership conference 2009, University of Wollongong, Australia 26-27 September 2009, (Oral presentation).
- The 23rd Annual chemistry &IPRI conference ,Koloona conference centre, Australia, 2-4 November 2009, (Oral presentation).
- The ACSE Electromaterials Symposium, Wollongong University, 4-6 February 2009 (Attendance).

- ICONN 2010 conference on Nanoscience and Nanotechnology, Sydney, Australia, convention& exhibition centre 22-26 February 2010, (Poster).
- Optoelectronic and Microelectronic materials and Device (COMMAD), National University, Canberra 12-15 December 2010, (Poster).
- The 19th international conference on composites engineering, Shanghai, China 24-30 July 2011 (Oral presentation + chair session).
- 12th international conference on the science and application of nanotubes, Brisbane convention& exhibition centre, Australia 24-29 June 2012, (Attendance).
- 7th international conference on surface, coating and Nano-structured Materials (NANOSMAT), Prague, Czech Republic 18-21 September 2012, (Oral presentation).
- 8th Pacific Rim International Congress on Advanced Materials and Processing (PRICM-8), Waikoloa, Hawaii August 4-9 August 2013, (Oral presentation).
- 3rd International Conference on Nanotek and Expo, Las Vegas, USA, 2-4 December 2013.
- 5th International Congress on Nanotechnology, Medicine and Biology, IMC University of Applied Sciences Krems, Austria, 26-28 March 2014.
- The 2014 Biopolymer Symposium, Philadelphia, USA, 12-13 May 2014.
- The 2nd International conference on chemistry science and application (ICCSA 2014), Chicago, Illinois, USA, 24-25 October 2014.
- Nanomaterials and their applications in energy technology Conference, Ventura, USA. 22-27 February 2015.
- MRS spring Meeting 2015, San Francisco, USA, 6-10 April 2015.
- Materials Science & Technology 2015, Columbus, USA, 4-8 October 2015.

Membership of Scientific Associations

- Membership of the Australian Nanotechnology Network (ANN).
- Membership of Australian Student Leadership Association (ASLA).
- Membership of Saudi Chemical Society (SCS).
- Material Research Society (MRS).

- American Chemical Society (ACS).

Journal Reviewers

- Materials Chemistry B.
- Polymers
- Polymers materials
- Polymer international
- Scientific Reports- Nature group.
- ACS Applied materials & interface.

Publications & Patents

Patents:

- ✓ Methods and materials for the removal of the rose Bengal dye from aqueous solution, (US 9334176B1).
- ✓ An electrochemical method for gender identification, under preparation, US patent.

Publications:

1. **Ali Aldalbahi** and M. in het Panhuis, "Inkjet printed conducting gel-carbon nanotube materials", IEEE Xplore Digital Library, Optoelectronic and Microelectronic Materials and Devices (COMMAD), 2010 Conference on 12-15 Dec. **2010**, Canberra, ACT, Page(s): 143 – 144, DOI: 10.1109/COMMAD.2010.5699707
2. **Ali Aldalbahi** and Marc in het Panhuis, "Preparation and characterisation of conducting biopolymer-carbon nanotube composite materials", (**2011**). World Journal of Engineering, 8 (supplement 1), 39-40, <http://ro.uow.edu.au/scipapers/1131>.
3. **Ali Aldalbahi** and Marc in het Panhuis, "Electrical and mechanical characteristics of buckypapers and evaporative cast films prepared using single and multi-walled carbon nanotubes and the biopolymer carrageenan",

Carbon, Volume 50, Issue 3, March **2012**, Pages 1197–1208, DOI: 10.1016/j.carbon.2011.10.034.

4. **Ali Aldalbahi**, Jin Chu, Peter Feng and Marc in het Panhuis, "Conducting composite materials from the biopolymer kappa-carrageenan and carbon nanotubes", Beilstein Journal of Nanotechnology, **2012**, 3, 415–427, DOI: 10.3762/bjnano.3.48.
5. Jin Chu, Xiaoyan Peng, **Ali Aldalbahi**, Marc in het Panhuis, Rafael Velazquez and Peter X Feng, "A simple route to carbon micro- and nanorod hybrid structures by physical vapour deposition", Journal of Physics D: Applied Physics, Published 13 September **2012**, Volume 45, Number 39, 395102 (5pp), DOI: 10.1088/0022-3727/45/39/395102.
6. Peter Feng, Muhammad Sajjad, Eric Yiming Li, Hongxin Zhang, Jin Chu, **Ali Aldalbahi** and Gerardo Morell, "Fringe structures and tunable bandgap width of 2D boron nitride nanosheets", Beilstein Journal of Nanotechnology, 31 July **2014**, 5, 1186–1192, Impact Factor: 2.326, DOI: 10.3762/bjnano.5.130.
7. Saad M. Alshehri, Mu. Naushad, Tansir Ahamad, Zeid A. Allothman, **Ali Aldalbahi**, "Synthesis, characterization of curcumin based ecofriendly antimicrobial bio-adsorbent for the removal of phenol from aqueous medium", Chemical Engineering Journal, Volume 254, 15 October **2014**, Pages 181–189, DOI: 10.1016/j.cej.2014.05.100.
8. Yahia Nasser Mabkhot, Munirah S. Al-Har, Assem Barakat, Fahad D. Aldawsari, **Ali Aldalbahi** and Zaheer Ul-Haq, "Synthesis, Anti-microbial and Molecular Docking Studies of Quinazolin-4(3H)-one Derivatives", Molecules, **2014**, 19(7), 8725-8739, DOI: 10.3390/molecules19078725.
9. Saad M. Alshehri, Tansir Ahamad, **Ali Aldalbahi** and Norah Alhokbany, "Pyridylimine Cobalt(II) and Nickel(II) Complex Functionalized Multiwalled Carbon Nanotubes and Their Catalytic Activities for Ethylene Oligomerization", Advances in Polymer Technology, Article first published online: 24 APR **2015**, Early View (Online Version of Record published before inclusion in an issue), DOI: 10.1002/adv.21528.
10. Yoshiaki Agawa, Hiroyuki Tanaka, Shigemitsu Torisu, Satoshi Endo, Akihiro Tsujimoto, Narishi Gonohe, Victor Malgras, **Ali Aldalbahi**, Saad M Alshehri,

- Yuichiro Kamachi, Cuiling Li and Yusuke Yamauchi, "Preparation of a platinum electrocatalyst by coaxial pulse arc plasma deposition", *Science and Technology of Advanced Materials*, Volume 16, Number 2, Published 27 March **2015**, 024804, (7pp), DOI: 10.1088/1468-6996/16/2/024804.
11. Kamel Eid, Victor Malgras, Pei He, Kunmiao Wang, **Ali Aldalbahi**, Saad M. Alshehri, Yusuke Yamauchi and Liang Wang, "One-step synthesis of trimetallic Pt–Pd–Ru nanodendrites as highly active electrocatalysts", *RSC Advances*, First published online 18 March **2015**, Issue 39, 5, 31147-31152, Impact Factor: 3.84, DOI: 10.1039/C5RA01981H.
 12. Saad M. Alshehri, **Ali Aldalbahi**, Tansir Ahamad and Norah Alhokbany, "Synthesis and characterization of mackinawite nanocrystals (FeS_m) and their application in recovery of aqueous Hg(II) solution", *Desalination and Water Treatment*, Published online: 27 April **2015**, 1–10, DOI: 10.1080/19443994.2015.1025432.
 13. Saad M. Alshehri, **Ali Aldalbahi** and Tansir Ahamad, "Synthesis, Characterization, and Biological Evaluation of a 4,7-Dihydroxy-1,10-Phenanthroline-Based Epoxy Resin and Its Polymer–Metal Complexes", *Advances in Polymer Technology*, Winter **2015**, Volume 34, Issue 4, DOI: 10.1002/adv.21512.
 14. Pavuluri Srinivasu, Dupati Venkanna, Mannepalli Lakshmi Kantam, Jing Tang, Suresh K. Bhargava, **Ali Aldalbahi**, Kevin C.-W. Wu and Yusuke Yamauchi, "Ordered Hexagonal Mesoporous Aluminosilicates and their Application in Ligand-Free Synthesis of Secondary Amines", *ChemCatChem*, March **2015**, Volume 7, Issue 5, Pages 747–751, DOI: 10.1002/cctc.201402916.
 15. Shoriya Aruni Abdul Manaf, Partha Roy, Korada V. Sharma, Zainab Ngaini, Victor Malgras, **Ali Aldalbahi**, Saad M. Alshehri, Yusuke Yamauchi and Gurumurthy Hegde, "Catalyst-free synthesis of carbon nanospheres for potential biomedical applications: waste to wealth approach", *RSC Advances*, First published online 24 Feb **2015**, Issue 31, 5, 24528-24533, Impact Factor: 3.84, DOI: 10.1039/C4RA14693J.
 16. Yunqi Li, Bishnu Prasad Bastakoti, Masataka Imura, Jing Tang, **Ali Aldalbahi**, Nagy L. Torad, and Yusuke Yamauchi, "Dual Soft-Template System Based on

- Colloidal Chemistry for the Synthesis of Hollow Mesoporous Silica Nanoparticles", *Chemistry – A European Journal*, Volume 21, Issue 17, April 20, **2015**, Pages 6375–6380, DOI: 10.1002/chem.201406137.
17. **Ali Aldalbahi**, Andrew Feng Zhou and Peter Feng, "Variations in Crystalline Structures and Electrical Properties of Single Crystalline Boron Nitride Nanosheets", *Scientific Reports*, Published online: 13 November **2015**, 5, Article number: 16703, DOI: 10.1038/srep16703.
 18. Kefayat Ullah, Arif Ullah, **Ali Aldalbahi**, Jin-do Chung and Won-Chun Oh, "Enhanced visible light photocatalytic activity and hydrogen evolution through novel heterostructure AgI–FG–TiO₂ nanocomposites", *Journal of Molecular Catalysis A: Chemical*, Volume 410, 15 December **2015**, Pages 242–252, DOI: 10.1016/j.molcata.2015.09.024.
 19. Ying Wan, Pengjuan Wang, Yan Su, Lihua Wang, Dun Pan, **Ali Aldalbahi**, Shulin Yang and Xiaolei Zuo, "Nanoprobe-Initiated Enzymatic Polymerization for Highly Sensitive Electrochemical DNA Detection", *ACS Applied Materials Interfaces*, Publication Date (Web): November 3, **2015**, 7 (46), pp 25618–25623, DOI: 10.1021/acsami.5b08817.
 20. Siyuan Feng Chen, **Ali Aldalbahi** and Peter Xianping Feng, "Nanostructured Tungsten Oxide Composite for High-Performance Gas Sensors", *Sensors*, Published: 23 October **2015**, 15(10), 27035-27046, DOI: 10.3390/s151027035.
 21. Dan Zhu, Hao Pei, Jie Chao, Shao Su, **Ali Aldalbahi**, Mostafizur Rahaman, Lihua Wang, Lianhui Wang, Wei Huang, Chunhai Fan and Xiaolei Zuo, "Poly-adenine-based programmable engineering of gold nanoparticles for highly regulated spherical DNAzymes", *Nanoscale*, Issue 44, First published online 05 Oct **2015**, 7, 18671-18676, Impact Factor: 7.394, DOI: 10.1039/C5NR05366H.
 22. Wang Pengjuan, Wan Ying, **Ali Aldalbahi**, Deng Shengyuan, Su Yan, Fan Chunhai, Yang Shulin, "Aptamer-wrapped gold nanoparticles for the colorimetric detection of omethoate", *Science China Chemistry*, First online: 17 September **2015**, pp 1-6, DOI: 10.1007/s11426-015-5488-5.

23. Chenguang Wang, Huan Zhang, Dongdong Zeng, Wenliang Sun, Honglu Zhang, **Ali Aldalbahi**, Yunsheng Wang, Lili San, Chunhai Fan, Xiaolei Zuo and Xianqiang Mi, "Elaborately designed diblock nanoprobe for simultaneous multicolor detection of microRNAs", *Nanoscale*, Issue 38, First published online 25 Aug **2015**, 7, 15822-15829, Impact Factor: 7.394, DOI: 10.1039/C5NR04618A.
24. Jichao Zhang, Liang Pan, Min Lv, **Ali Aldalbahi**, Tian Xie, Aiguo Li, Renzhong Tai, Qing Huang, Chunhai Fan, Yun Zhao and Ying Zhu, "Transportation and fate of gold nanoparticles in oilseed rape", *RSC Advances*, Issue 90, First published online 24 Aug **2015**, 5, 73827-73833, Impact Factor: 3.84, DOI: 10.1039/C5RA07278F.
25. Huan Zhang, Yunsheng Wang, Daiwei Zhao, Dongdong Zeng, Jiaoyun Xia, **Ali Aldalbahi**, Chenguang Wang, Lili San, Chunhai Fan, Xiaolei Zuo and Xianqiang Mi, "Universal Fluorescence Biosensor Platform Based on Graphene Quantum Dots and Pyrene-Functionalized Molecular Beacons for Detection of MicroRNAs", *ACS Applied Materials Interfaces*, Publication Date (Web): July 22, **2015**, 7 (30), pp 16152–16156, DOI: 10.1021/acsami.5b04773.
26. Degao Wang, Huaican Chen, Guoliang Chang, Xiao Lin, Yuying Zhang, **Ali Aldalbahi**, Cheng Peng, Jianqiang Wang and Chunhai Fan, "Uniform Doping of Titanium in Hematite Nanorods for Efficient Photoelectrochemical Water Splitting", *ACS Applied Materials Interfaces*, Publication Date (Web): June 8, **2015**, 7 (25), pp 14072–14078, DOI: 10.1021/acsami.5b03298.
27. **Ali Aldalbahi** and Peter Feng, "Development of 2-D Boron Nitride Nanosheets UV Photoconductive Detectors", *IEEE Xplore Digital Library*, *IEEE Transactions on Electron Devices*, Volume: 62, Issue: 6, June **2015**, DOI: 10.1109/TED.2015.2423253.
28. Peter Feng, Xinpeng Wang, **Ali Aldalbahi** and Andrew F. Zhou, "Methane induced electrical property change of nitrogen doped ultrananocrystalline diamond nanowires", *Applied Physics Letters*, Volume 107, Issue 23, 233103, published online 7 December **2015**, DOI: 10.1063/1.4937267.
29. Zhifen Cui, Yu Zhang, Jichao Zhang, Huating Kong, Xiaoxing Tang, Liang Pan, Kai Xia, **Ali Aldalbahi**, Aiguo Li, Renzhong Tai, Chunhai Fan, Ying Zhu,

- "Sodium alginate-functionalized nanodiamonds as sustained chemotherapeutic drug-release vectors", *Carbon*, Volume 97, February **2016**, Pages 78–86, DOI: 10.1016/j.carbon.2015.07.066.
30. **Ali Aldalbahi**, Mostafizur Rahaman, Tapan Kumar Chaki, Dipak Khastgir, "Direct-current conductivity at a cryogenically low temperature for polymer/carbon composites: Applicability of different theoretical models", *Journal of Applied Polymer Science*, Volume 133, **2016**, Pages 43541, DOI: 10.1002/app.43541.
 31. Chongya Hu, Jianlei Shen, Juan Yan, Jian Zhong, Weiwei Qin, Rui Liu, **Ali Aldalbahi**, Xiaolei Zuo, Shiping Song, Chunhai Fan and Dannong He, "Highly narrow nanogap-containing Au@Au core-shell SERS nanoparticles: size-dependent Raman enhancement and applications in cancer cell imaging, *Nanoscale*, Volume 8, **2016**, Pages 2090-2096, DOI: 10.1039/C5NR06919J.
 32. **Ali Aldalbahi**, Eric Li, Manuel Rivera, Rafael Velazquez, Tariq Altalhi, Xiaoyan Peng, Peter X. Feng, "A new approach for fabrications of SiC based photodetectors ", *Scientific reports*, 6,23457,**2016**, DOI: 10.1038/srep23457.
 33. **Ali Aldalbahi**, Peter Feng, N. S. Al-Hokbany, Saad Alshehri "Synthesis, characterization, and CH₄-sensing properties of conducting and magnetic biopolymer nano-composites", *Journal of Environmental Chemical Engineering*, 4, 2841-2847, **2016**, <https://doi.org/10.1016/j.jece.2016.05.028>.
 34. Xiaoyan Peng, **Ali Aldalbahi**, Peter Feng "A flexible humidity sensor based on biopolymers–MWCNTs composites", *Applied Surface Science*, 387,149-154, **2016**, <https://doi.org/10.1016/j.apsusc.2016.05.108>.
 35. Lalatendu Nayak, Mostafizur Rahaman, **Ali Aldalbahi**, Tapan Kumar Chaki, Dipak Khastgir " Polyimide-carbon nanotubes nanocomposites: electrical conduction behavior under cryogenic condition", *Polymer Engineering & Science*, 57,291-298,**2017**, DOI: 10.1002/pen.24412.
 36. Ting Wang, Ali Aldalbahi, Chunhai Fan " Size-Dependent Regulation of Intracellular Trafficking of Polystyrene Nanoparticle-Based Drug-Delivery Systems" *ACS Appl. Mater. Interfaces*, 9, 18619–18625, **2017**

37. Subhadip Mondal, Sayan Ganguly, Mostafizur Rahaman, **Ali Aldalbahi**, Tapan K. Chaki, Dipak Khastgir and Narayan Ch. Das "A strategy to achieve enhanced electromagnetic interference shielding at low concentration with a new generation of conductive carbon black in a chlorinated polyethylene elastomeric matrix", *Physical Chemistry chemical chemistry*, 18, **2017**, 24591-24599, DOI:10.1039/C6CP04274K.
38. **Ali Aldalbahi**, Saad M. Alshehri, Tansir Ahmad "Synthesis and characterization of hybrid nanocomposites as highly-efficient conducting CH₄ gas sensor" *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 173, 502-509, **2017**, <https://doi.org/10.1016/j.saa.2016.09.009>.
39. Manuel Rivera , Mostafizur Rahaman , **Ali Aldalbahi** , Rafael Velázquez , Andrew F. Zhou 3 and Peter X. Feng "Exploring the Effects of Argon Plasma Treatment on Plasmon Frequency and the Chemiresistive Properties of Polymer-Carbon Nanotube Metacomposite" *Materials*, 10, 986, **2017** DOI:10.3390/ma10090986 .
40. M. Naziruddin Khan, A.S. Al Dwayyan, **Ali Aldalbahi** "Light emitting composite rods based on porous silicon in ormosils and polymer matrices for optical applications" *Optics and laser Technology*, 91, 203-2011, **2017**.
41. **Ali Aldalbahi**, Mostafizur Rahaman and Mohammed Almoqli "A Strategy to Enhance the Electrode Performance of Novel Three-Dimensional PEDOT/RVC Composites by Electrochemical Deposition Method" *Polymers*, 9, 157, **2017** DOI:10.3390/polym9050157.
42. Ranvijai Ram, Mostafizur Rahaman, **Ali Aldalbahi** and Dipak Khastgir "Determination of percolation threshold and electrical conductivity of polyvinylidene fluoride (PVDF)/short carbon fiber (SCF) composites: effect of SCF aspect ratio" *Polymer International*, 66, 573-582, **2017** DOI: 10.1002/pi.5294
43. Javed Alam, **Ali Aldalbahi** "κ-Carrageenan as a promising pore-former for the preparation of a highly porous polyphenylsulfone membrane" *Materials letters*, 204, 108-111, **2017**.

44. **Ali Aldalbahi** , Mostafizur Rahaman , Periyasami Govindasami ,Mohammed Almoiqli ,Tariq Altalhi and Amine Mezni" Construction of a Novel Three-Dimensional PEDOT/RVC Electrode Structure for Capacitive Deionization: Testing and Performance " Materials, 10, 847, **2017** DOI:10.3390/ma10070847.