Amira Alazmi

University of Hafr Al Batin (UHB)

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Vice Dean for Academic Affairs at university colleges at Nariyah, Work for University of Hafr Al Batin

Assistant Professor/ Chemical Science Department

(Teaching | Mentoring | Research & Development | Assessment & Evaluation)

OBJECTIVE

Design advanced and new materials for electrocatalysts, CO_2 capture, energy conversion, and energy storage applications.

SUMMARY OF QUALIFICATIONS

- Adept at both applied and theoretical chemistry with a special focus on carbon materials (e.g., graphene) and nanoparticles.
- Skilled in the entire development of novel compounds: Synthesis, Molecular Analysis and Characterization of Materials.
- Experienced in material design, synthesis, and characterization for Electro-catalysis and Energy storage applications.

EDUCATION

- **Ph.D. Chemical Science** 2014- 2018 **Saudi Arabia**
- King Abdullah University for science and technology, (KAUST)
  Dissertation Topic: Rational Design of Reduced Graphene Oxide Materials for Environmental and Energy Storage Applications
  Objective: Design carbon-based materials (e.g., graphene) for CO_2 capture and energy storage application such as a supercapacitor
  Professor Name: Pedro Da Costa
- **M.S Chemical Science** 2012- 2014 **Saudi Arabia**
  Thesis Topic: CuZn Alloy- Based Electrocatalyst for CO_2 Reduction, Jun 2014
  Objective: Design an electro-catalysts for conversion of atmospheric or industrially sourced CO_2 to CO.
  Professor Name: Kazuhiro Takanabe
  King Abdullah University for science and technology, (KAUST)
- **B.S Education and science** 2005-2009 **Saudi Arabia**
  King Faisal University, (KFU)

WORK EXPERIENCE

- Work for University of Hafr Al Batin **(Chemical Science department)** 2010- Present **Saudi Arabia**

ADMINISTRATIVE EXPERIENCE

- **Laboratory safety representative (LSR) at Laboratory For Carbon Nanostructures, KAUST**
  - Assist the graduate students and postdocs to meet their responsibilities for safety and compliance as described in the Lab Safety Manual.
  - Act as a focal point for all health and safety matters arising at the particular location.
- **Atomic Layer Deposition (ALD) at Laboratory for Carbon Nanostructures, KAUST**
  - Person-in-charge of ALD at Laboratory for Carbon Nanostructures. Involved in training and supporting the graduates and postdocs regarding the utilization of instruments and interpretation of the data obtained from ALD.
- **Plan and prepare the academic schedule for all the courses at college of art and science ،Nayirah, University of Hafr Al Batin**
- **Examinations control at the college of art and science ،Nayirah, University of Hafr Al Batin**
- **Academic guider and coordinator at Chemical Science Department for about 500 students, Nayirah, University of Hafr Albatin**
- **Graduation affairs at Chemical Science Department, college of art and science ،Nayirah, University of Hafr Al Batin**
- **Non-curricular activities coordinator at Chemical Science Department, Nayirah, University of Hafr Al Batin**

- **PROFESSIONAL EXPERIENCE**

  - **Mentoring Experience:**
    - Supervised internship student at KAUST from École Nationale Supérieure de Chimie de Montpellier (ENSCM), France (2015)
    - Supervised internship a high school student at KAUST from Saudi Research Science Institute (SRSI), (2015)
    - Supervised internship student at KAUST from Beirut Arab University, Lebanon (2015)
    - Evaluating SRSI students' papers at KAUST, (2017)
    - Supervised internship student at KAUST from University of Manchester, UK (2018)
  - **Teaching Experience:**
    Physical Chemistry, Electrochemistry, Quantum Chemistry, Biochemistry, Inorganic Chemistry, General Chemistry and Analytical Chemistry, Nayirah, University of Hafr Al Batin

- **Volunteer Experience**
  - KAUST physical science and engineering (PSE) student ambassador (2018)

TECHNICAL SKILLS:

Characterization Techniques: X-ray diffraction (XRD), Transmission electron microscopy (TEM), Scanning electron microscopy (SEM), Inductively coupled plasma atomic emission spectroscopy (ICP-OES), X-ray photoelectron spectroscopy (XPS), Raman spectroscopy, Atomic-force microscopy (AFM), Fourier transform infrared spectroscopy (FTIR), Ultraviolet-visible spectroscopy (UV-Vis), Brunauer–Emmett–Teller (BET)/ N_2 adsorption analysis, Thermogravimetric analysis (TGA), Superconducting quantum interference device (SQUID), Atomic layer deposition (ALD), Refractometer, Ellipsometer, profilometer, Gas/ Liquid Chromatography (GC, HPLC).

Electrochemical Characterization: Cyclic voltammetry (CV), Galvanostatic battery technique (BT), Electrochemical impedance spectroscopy (EIS), Potentiometric/ Chronoamperometric technique.

RESEARCH EXPERIENCE

- **King Abdullah University of Science and Technology (KAUST)** (**2014** to date) (Ph.D. student)
- **Objective:** Design carbon-based materials (e.g., graphene) for CO_2 capture and energy storage application such as a supercapacitor. Current projects accomplishments include;
  - Comparison of graphene oxide synthesis and reduction methods for graphene oxide
  - Process to enhance the specific surface area and capacitance of hydrothermally reduced graphene oxide
  - CO_2 Capture by Graphene Oxide.
  - Cobalt Ferrite/ Reduced Graphene Oxide Composites As T_2 Contrast Agent for Magnetic Resonance Imaging
  - Low- Temperature Atomic Layer Deposition of Platinum on graphene for hydrogen evolution reaction
- **Queen Mary University of London (QMUL)**
  - Hydrothermal Carbonization and Activation of Palm Date Pits (**July 2018**) (Internship)
- **King Abdullah University of Science and Technology (KAUST)** (**2013 to 2014**) (M.S student)

A Alazmi,"CuZn Alloy- Based Electrocatalyst for CO_2 Reduction", Thesis, KAUST, 2014.

AWARDS AND RECOGNITIONS

- 2011 Selected as a distinguished demonstrator at college of art and science ،Nayirah, University of Dammam
- 2012-2017 KAUST fellowship awards
- 2017 won the "Science as Art 2017" competition (fourth place), KAUST student chapter of the Materials Research Society (MRS)
- 2018 won the poster prize at RSC Chemical Nanoscience & Nanotechnology Group Annual Symposium in Burlington House, London, 6th-7th September, 2018
- Awarded for KACST-MIT Ibn Khaldun Fellowship for Saudi Arabian Women, 2019

LANGUAGES Arabic: Native speaker English: Advance

COMPUTER SKILLS Gaussian view, Sci Finder, Microsoft Office, Mac OS and Chem-Bio-Draw.

PATENTS

1. **Amira Alazmi**, P. M. F. J. Costa, "Graphene materials and improved methods of making, drying and application thereof", USPTO, WO 2018l033816A1, published: 22 February 2018.
2. S Rasul, PMFJ Costa, **Amira Alazmi**, "Graphene oxide particles and methods of making and using them", USPTO , WO2017/208158A1, published: 7 December 2017.
3. Shafeer Kalatheil, P Krishna, **Amira Alazmi**, P. M. F. J. Costa, Pascal E. Saikaly "Method of producing electrically active bacteria reduced graphene oxide and electrically active bacteria reduced graphene oxide", USPTO, US2018/0346935A1, published: 6 December 2018.

PUBLICATIONS

1. **Amira Alazmi.**; Rasul, S.; Patole, S. P.; Costa, P. M. F. J., Comparative study of synthesis and reduction methods for graphene oxide. Polyhedron 2016, 116, 153-161.
2. **Amira Alazmi,** O. El Tall, S. Rasul, M.N. Hedhili, S.P. Patole, P.M.F.J. Costa, A process to enhance the specific surface area and capacitance of hydrothermally reduced graphene oxide, Nanoscale, 8 (**2016**) 17782-17787.
3. S. Rasul, **Amira Alazmi**, K. Jaouen, M.N. Hedhili, P.M.F.J. Costa, Rational design of reduced graphene oxide for superior performance of supercapacitor electrodes, Carbon, 111 (**2017**) 774-781.
4. Smajic, J.; **Amira Alazmi**.; Patole, S. P.; Costa, P. F. J., Single-walled carbon nanotubes as stabilizing agents in red phosphorus Li-ion battery anodes. *RSC Advances* **2017,** *7* (63), 39997-40004.
5. **Amira Alazmi**, Tall, O. E.; Hedhili, M. N.; Costa, P. M. F. J., The impact of surface chemistry and texture on the CO_2 uptake capacity of graphene oxide. Inorganica Chimica Acta **2018**, 482, 470-477.
6. Smajic, J.; **Amira Alazmi**.; Batra, N.; Palanisamy, T.; Anjum, D. H.; Costa, P. M. F. J., Mesoporous Reduced Graphene Oxide as a High Capacity Cathode for Aluminum Batteries. Small, 2018, 14, 1803584.
7. Shafeer Kalathil1, Krishna P. Katuri1, **Amira Alazmi** et al., Bio-inspired synthesis of reduced graphene oxide wrapped Geobacter sulfurreducens as a hybrid electrocatalyst for efficient oxygen evolution reaction, Chemistry of Materials,2019.

8. Smajic, J.; **Amira Alazmi**.; Costa, P. F. J., The Role of the Binder/Solvent Pair on the Electrochemical Performance of Aluminium Batteries, (MRS Advances).
9. **Amira Alazmi** et al., Cobalt Ferrite Supported on Reduced Graphene Oxide as a T_2 Contrast Agent for Magnetic Resonance Imaging, RSC Adv., **2019**,9, 6299-6309.

INTERNATIONAL CONFERENCES

1. International Exhibition and Conference on Higher Education, Riyadh, KSA, 2012.
2. Royal Society of Chemistry (RCS), Cambridge, UK, 2013.
3. Amira Alazmi et al., "Enhancing the pseudocapacitance performance of reduced graphene oxide-$CoFe_2O_4$ composites–a systematic study", Materials Research Society (MRS) Fall Meeting, Boston, Massachusetts, US,2015, (Poster).
4. Amira Alazmi et al., "Pathway to enhanced graphene-based electrochemical capacitors," 254th ACS National Meeting in Washington, DC, August 20-24, 2017, (Oral presentation).
5. Amira Alazmi et al., "The impact of surface chemistry and texture on the CO_2 uptake capacity of graphene oxide", 255th ACS National Meeting in New Orleans, LA, March 18-22, 2018, (Oral presentation).
6. Amira Alazmi et al., " Cobalt Ferrite Supported on Reduced Graphene Oxide as a T_2 Contrast Agent for Magnetic Resonance Imaging", RSC Chemical Nanoscience & Nanotechnology Group Annual Symposium in Burlington House, London, 6th-7th September, 2018, (Poster).
7. International Exhibition and Conference on Higher Education, Riyadh, KSA, 2019.

PROFESSIONAL TRAINING:

1. Research Ethics Workshop, Research and Development Office (RDO), **Ministry of Education**, Tabuk, KSA, 24-25 March, **2019**
2. Women Leadership in higher education, academic leadership centre, **Ministry of Education**, Al Khobar, KSA, 27 March, **2019**