Dr. Abdulaziz K. Assaifan

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Last update: July 2020

OCCUPATION

- ***Assistant Professor*** June 2020 – to date
  King Saud University, College of Science, Building 4, King Abdullah Institute for Nanotechnology, Riyadh, Saudi Arabia.

EDUCATION

- ***PhD. in Nanotechnology*** July 2018
  Swansea University, Swansea, UK
  Project title: Development of ZnO Nanobiosensors for the Direct Detection of Pathogens

- ***MSc. (Distinction) in Nanoscience to Nanotechnology*** January 2015
  Swansea University, Swansea, UK
  Project title: Electrochemcial Growth of Gold Nanowires on printed Seed for Biosensing Applications
  GPA: 4.0/4.0

- ***BEng. (First Class Hons) in Electronic Engineering with Nanotechnology*** July 2013
  Swansea University, Swansea, UK
  GPA: 4.0/4.0 (ranked 1st in the College of Engineering)

ACADEMIC PRIZES AND AWARDS

- Mr & Mrs J T Morgan Scholarship.
- R O Dunmore Prize.
- The Institute of Engineering and Technology (IET).
- Top BEng student across all engineering disciplines.
- Top student in Engineering Foundation Year.
- Excellence certificates from UK Saudi Cultural Bureau.

PATENTS

- 'Methods of Manufacturing a Biosensor Platform'. Patent no. GB 1612292.1 (2016)

EMPLOYMENT HISTORY

- ***Postdoctoral Research Fellow*** January 2019 – March 2020
  College of Engineering, King Saud University, Riyadh, Saudi Arabia
  Advisor: Dr. Hamad F. Alharbi

TEACHING AND SUPERVISION

A. Courses Taught:
Nanocrystalline Materials (MSE 556). King Saud University

B. Research Assistant supervised:
Mr. Abdulrahman Aljoaidi
Research Topic: Development of nanofibrous membranes for water purification applications

C. Undergraduates supervised:
Mr. Khalid, Mr. Sohaib, and Mr. Fadel
B.S. Senior Design Graduation Project (ME496/ME497): "Designing an electrospinning collector for enhancing the uniformity and physical properties of fabricated nanofibers".

RESEARCH INTERESTS

My research interests are broadly centered in the areas of nanomaterials and controlling their surface properties for biosensing applications. My research also involves printing and coating which scales up the use of nanomaterials in different applications including water purifications, solar energy and medicine. During my

postgraduate studies, I developed a novel nanosensor for the direct detection of viruses using low-cost, high throughput techniques.

PUBLICATIONS

- **Assaifan, A. K.**; Lloyd, J. S.; Samavat, S.; Deganello, D.; Stanton, R. J.; Teng, K. S., Nanotextured Surface on Flexographic Printed ZnO Thin Films for Low-Cost Non-Faradaic Biosensors. *ACS Applied Materials & Interfaces* **2016,** *8* (49), 33802-33810. (Impact Factor : 8.5)
- **Assaifan, A. K.**; A; Alshehri, Lewis, N; S.; Samavat; Y.C. Lau; Deganello, Davide; teng, K. S., Effect of intense pulsed light on hydrothermally-grown ZnO nanowires, Materials Letters. 2020. 127797
- **Assaifan, A. K.**; Lloyd, J. S.; Samavat, S.; Deganello, D.; Stanton, R. J.; Teng, K. S.,Direct Detection of Human Cytomegalovirus using low-cost Zinc Oxide Nanobiosensors. Journal of Interdisciplinary Nanomedicine. BSNM. **2017**.
- Hamad. F. Alharbi.; Mustafa Y. Haddad.; Muhammed O. Aijaz, **Assaifan, A. K.**.; Mohammed R. Karim.; Electrospun bilayer PAN/Chitosan nanofiber membranes incorporated with metal oxide nanoparticles for heavy metal ion adsorption, *Polymer*, **2019.** (submitted)
- S. Mahjabin *et al*., "Perceiving of Defect Tolerance in Perovskite Absorber Layer for Efficient Perovskite Solar Cell," in *IEEE Access*, vol. 8, pp. 106346-106353, 2020, doi: 10.1109/ACCESS.2020.3000217.
- **Abdulaziz K. Assaifan**, Nuha Al habis, Iftikhar Ahmad, Naif Ahmed Alshehri, Hamad F. Alharbi, Scaling-up medical technologies using flexographic printing, Talanta, Volume 219, 2020,

CONFERENCES AND SEMINARS

- Direct Detection of Human Cytomegalovirus using Low-cost Zinc Oxide Nanobiosensors. European Nanomedince Meeting, April 2017, Kings College London, London, UK.
- Printing for bio-applications: sensors and beyond. Welsh Centre for Printing and Coating (WCPC) Annual Technical Conference.November 2017, Swansea, UK.
- Fabrication and characterization of ZnO@TiO_2 nanowires heterostructure using versatile kinetics-controlled coating growth method. April 2019, Swansea University, UK.
- Enhancement of heavy metal ion adsorption using electrospun polyacrylonitrile nanofibers loaded with ZnO/TiO2 nanoparticles. 9th International Colloids Conference. June 2019, Barcelona, Spain.
- Electrospun polymeric nanofibers incorporated with carbon nanofillers for water treatment applications. the ACS Fall 2019 National Meeting & Exposition in San Diego, CA
- Low-cost mass production of nanobiosensors, King Abdullah Institute for Nanotechnology. April 2019. **(seminar)**
- High throughput production of ZnO nanobased-devices. Mechanical Eng Department, KSU. May 2019. **(seminar)**
- Future of Printed Nanomaterials. CENT, KFUPM. September 2019. **(seminar)**
- High throughput production of ZnO nanobased-devices. SERI, National University of Malaysia. January 2020. **(seminar)**

COLLABORATION

- Centre of Research Excellence in Nanotechnology (CENT), KFUPM, Dhahran, Saudi Arabia
- Centre for Nanohealth (CNH), Swansea University, Swansea, UK
- Welsh Centre for Printing and Coating (WCPC), Swansea university, Swansea, UK
- Solar energy research institute (SERI), National University of Malaysia, Malaysia
- Cambridge Graphene Centre, the University of Cambridge, Cambridge, UK

REFERNCES

Professor. Kar Seng (Vincent) Teng https://www.swansea.ac.uk/staff/engineering/k.s.teng/
Professor. Owen J. Guy https://www.swansea.ac.uk/staff/engineering/o.j.guy/
Professor. Davide Deganello https://www.swansea.ac.uk/staff/engineering/d.deganello/