



الأسم: م. د. عبد الجبار إبراهيم رشيد

الشهادة: • دكتوراه في كيمياء النانو (صناعة الحساسات الكيمائية والبايولوجية بحجم المايكرومتر-جامعة برمنغهام البريطانية- المملكة المتحدة-2018

• ماجستير في الكيمياء الفيزيائية-الجامعة المستنصرية-2005

• بكالوريوس علوم كيمياء-الجامعة المستنصرية-1998

الوظيفة الحالية: تدريسي في قسم الكيمياء-كلية العلوم-الجامعة المستنصرية لمدة 16 سنة

تدريسي في قسم الكيمياء-كلية الهندسة والعلوم الفيزيائية-جامعة برمنغهام-بريطانيا-المملكة المتحدة لمدة 4 سنوات

بحوث التخرج: الاشراف على بحوث تخرج المرحلة الرابعة (14 طالب متخرج) في مجالات الكيمياء الفيزيائية وكيمياء النانو المتقدمة

المواضيع البحثية: 1- صناعة دقائق الذهب النانوية باقطار مختلفة
2- تحميل المركبات الدوائية على سطح دقائق الذهب النانوية
3- تحميل المبيدات الزراعية على سطح دقائق الذهب النانوية
4- صناعة الحساسات الكيمائية والبايولوجية
5- زيادة خصائص البلورات السائلة
6- اعادة تأهيل البطاريات المستهلكة

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Dr Abduljabbar I. R. Rushdi

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Doctor of NanoChemistry

Bio

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Present Job

Academic Staff-Lecturer at Department of Chemistry, Mustansiriyah University, Baghdad, Iraq.

Qualifications

- **2013-2018 PhD** University of Birmingham with thesis entitled "Nano Material Sensing Integrating MEMS Technology and Self-Assembled Monolayers" in the Research Group of Professor Jon A. Preece, who was a member of the Research Group of Professor J Fraser Stoddart, FRS (Nobel Prize 2016).
- **2002-2005 MSc** Mustansiriyah University with thesis entitled "Photo study of some organophorous insecticide degradation at different environmental conditions".
- **1994-1998 BSc** Mustansiriyah University in Pure Chemistry.
- **2017-2018 Member of ChemBam, Chemistry research for everyone**
(<https://chembam.com/online-resources/experiments/gold-sensing/>) .
- **2013** Member of Royal Society of Chemistry.

Working History

2005 – 2013 : Lecturer at Mustansiriyah University, Baghdad-Iraq.

These include: kinetic chemistry, electrical chemistry, conductivity and potentiometric titration, *180 students, 16 h/w*, in addition to the laboratory teaching and supervision.

2014 – 2018 : Lecturer at University of Birmingham, Birmingham-UK.

These include: Electrical chemistry and identification of compounds by using UV-Vis and FTIR, *54 students, 10 h/w*, as a laboratory teaching and supervision.

2020-until present: Lecturer at Mustansiriyah University, Baghdad-Iraq.

These include: Properties of gases, (1st, 2nd and 3rd law of thermodynamics), thermo chemistry, phase equilibria, solutions and chemical equilibrium, *120 students 16 h/w*, in addition to the laboratory teaching and supervision.

Teaching Programmes

- 2nd and 3rd physical chemistry courses in all Chemistry BSc degree programmes.
- 4th advanced projects supervision for BSc in all morning and evening studies.
- 2nd - 4th teaching BSc lab.
- 4th NanoChemistry courses (SAMs and MEMS devices)
- Professional in manipulating metal surfaces with a monolayer of organic components such as thiols, thiophenes, sulphide and disulphide.
- Synthesis of gold Nanoparticles (GNPs) with different diameters.
- Replacement and manipulation of GNPs with different surfactants.

Publications:

Author of five scientific publications in the field of physical and Nano chemistry.

2018

- 1- Rushdi, A.I., (2018): **Nanomaterial sensing: integrating MEMS technology and self-assembled monolayers**, University of Birmingham, PhD thesis, <https://etheses.bham.ac.uk/id/eprint/8461>.

2017

- 2- Rushdi, A.I. , Mahmoodi, N., Bowen, J., Sabouri, A., Anthony, C.J., Mendes, P.M., Preece J.A., (2017): **Room temperature thermally evaporated thin Au film on Si suitable for application of thiol self-assembled monolayers in MEMS/NEMS sensors**, J. Vac. Sci. Technol. A, 35, (4), 041514-1-041514-6).

2011

- 3- Rushdi, A.I., Hussain, D.H., Khalaf, H.A., (2011): **Synthesis and Statistical Study of Multi Wall Carbon nanotubes on Cu Substrate Using Electrochemical Cell.**, Iraq Journal of science, 52(4):408-414.

- 4- Rushdi, A.I., (2011): **Effects of Temperature on Thermodynamic parameters and Carbon Nanotubes Growth Rate on Aluminum Electrode in Electrochemical deposition Process.**, Ibn AL-Haitham J. For Pure & Appl. Sci. 24(1):113-121.

2010

- 5- Rasheed, A.I., Hussain, D.H., and Faisal, A.D., (2010): **Synthesis Of Carbon Nanotubes By Electrochemical Deposition using Aluminum Substrate.**, Special Edition Researchers of The 6th conference College of Science Al-Mustansiriyah University from 9-10 Februray, Al-Mustansiriyah Journal of Science.; 21(5): 168-174.

Conferences And Symposium

21 conferences, symposiums, seminars and presentations have been achieved at different Universities in UK (Birmingham, Cambridge, Newcastle and Keele) with different projects in the field of NanoChemistry (SAMs and Nanoparticles) and Nanotechnology (MEMS/NEMs devices). Honorship awarded from the University of Cambridge.

6 workshops of synthesis and application of Chemical and Biological Sensors have been demonstrated at the department of Chemistry-Mustansiriyah University, and multiple certificates of appreciation have been awarded.

Recently, A member of the international conference of chemitry, in addition to work as a valuable contribution as scientific committee in 2020, and a certificate of appreciation has been awarded.

IT Skills:

- Courses in computer software, Windows, MS Office in addition to Internet.
- IC3 certificate (Certiport).
- Knowledge of chemistry software ChemBioDraw 3D.
- XPS certificate (Newcastle University, the fifth centre in the world).
- JPK NanoWizard SPM and IP software (AFM processing data and images).
- Gwyddion (AFM processing data and images).
- ImageJ (AFM processing data and images).
- OpenQCM (processing frequency and mass in Nanoscale 1ng-100µg)
- DeltaPsi2 v2.0.8 software (thickness in Nanoscale).
- Delsa.ico (Nanoparticles characterization)
- FTA32 (Measuring wetting properties for Nanodeposites).
- One Attention (Measuring wetting properties for Nanodeposites)

Other Experiences:

Experience In The Following Techniques:

- X-ray Photoelectron Spectroscopy (XPS)
- Quartz Crystal Microbalance (QCM)
- Surface Plasmon Resonance (SPR)
- Atomic Force Microscopy (AFM)
- Dynamic Light Scattering (DLS) for Particle Sizer
- Zeta Potential (ZP)
- Ellipsometry (Ellip) for measuring the thickness of thin films
- Contact Angle (CA) for measuring the wetting properties of the surfaces
- Cary 5000 and 50 UV-Visible Recording Spectrophotometer.
- IR- Recording Spectrophotometer.
- Atomic Absorption Spectrophotometry (AAS).
- Flame Photometric Analysis (FPA).
- Radiation system.

Training Courses:

A trainer at different aspects

- AFM technique.
- QCM technique (Installation, setup and maintenance).
- SPR technique.
- Ellipsometry technique.
- Contact angle technique for surface energy measurement.
- Dynamic Light Scattering with full maintenance.
- Zetapotential technique with full maintenance.
- Prepare different types of nanosurface at fixed or different conditions.
- Cleaning procedures of metal surfaces for deposition of nanomaterials.
- Preparing Piranah solution with full safety conditions.
- Preparing Aqua regia solution with full safety conditions.
- Preparing different systems for MEMS devices. Chemical sensors, to sense nanoparticles and to sense positive and negative ions. Biosensors for sensing proteins and other biological analytes.
- Preparing different diameters of gold nanoparticles (G-NPs).

Appreciation Letters Awarded During The Period Of 2005-2021:

- **Minister of Higher Education and Scientific Research** (Ten letters) awarded in 2011, 2012, 2016, 2019, 2020 (Four letters) and in 2021 (Two Letters).
- **President of Mustansiriyah University** (Nine letters) awarded in 2011, 2012, 2014, 2016, 2018, 2019 (Two Letters), 2020 and in 2021.
- **Dean of Collage of Science, Mustansiriyah University** (Fifteen letters) awarded in 2008 (One letter), in 2010 (Four letters), in 2011 (Three letters), in 2012 (Two letters) in 2015 (One letter), in 2019 (One letter), 2020 (One letter) and in 2021 (Two Letter).
- **Dean of College of Arts, Mustansiriyah University** (two letters) awarded in 2020 (Two letter).
- **Head of Chemistry Department Mustansiriyah University** (Four letters) awarded in 2009, 2010, 2011 and 2012 where these letters awarded due to the excellent supervision for the projects of the 4th year of undergraduate students.
- **Head of School of Chemistry, University of Birmingham, UK** (Three letters) awarded in 2016, 2017 and 2018, for installing Quartz Crystal Microbalance-Home made (QCM) complete system.