Assist. Prof. Dr. Burak Yahya Kadem
Dean of College of Science / Al-Karkh University of Science
Baghdad, Iraq
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Personal Information:

Date of birth: 13th march 1976
Nationality: Iraqi
Sex: Male
Marital status: Married with 3 children
General specialty: Physics
Specific specialty: Nanotechnology

Education:

- B.Sc., 1999, Al-Mustansiriyah University, College of Science, Physics Department, Iraq.
- M.Sc., 2002, Al-Mustansiriyah University, College of Science, Physics Department, Iraq.
- MPhil. PhD, 2017, Material and Engineering Research Institute, Sheffield Hallam University, UK.

Social Contact:

- https://www.researchgate.net/profile/Burak_Kadem3
- https://scholar.google.co.uk/citations?user=vI_GgGcAAAAJ&hl=en&authuser=1

Membership:

- Member of Iraqi computer science society.
- Member of Iraqi physics and mathematics society.
- Member of editorial board of Advances in Physics theories and applications.
- Reviewer in International Review of Physics Journal (IREPHY), Worthy Prize publisher, Italy.
- Member of scientific committee in International conference of Technologies and Materials for Renewable Energy, Environment and Sustainability (2014-2019).
- Member of Iraqi Student Society in Sheffield, UK (Activity officer) (2015-2016)
- Member of editorial board of journal of electron device.
- Member of International Association of Advanced Materials 2017.
- Member of scientific committee in Baltic Conference Series 2017, Sweden.
- Member of Scientific Committee of Physics department-College of Science-University of Babylon (2018-2019).

Work Experience:

- Lecturer and Researcher in Physics Department, College of Science, University of Babylon, (December 2005-May 2019).
- Head of Quality Assurance Department, Al-Karkh University of Science, (July 2019-March 2020)
- Vice-chancellor assistance of scientific affairs (Oct.2019-Dec.2019)
- Dean of College of Science-Al-Karkh University of Science (Dec.2019- till now)

Responsibilities:

- Teaching and supervising General Physics Laboratory (2005-2009).
- Teaching and supervising Solid State Laboratory (2007-2009)
- Teaching Digital Electronics module (2010-2012)
- Teaching and supervising Digital Electronics Laboratory (2010-2012)
- Chief assistance of Advanced Polymer Laboratory (2010-2012)
- Teaching Integrated Circuits module (2017-2018)
- Chief of Advanced Polymer Laboratory (2017-on going)
- Teaching Superconductivity module (2017-2018)
- Teaching Integrated Circuits Module (2018-2019)
- Head of Quality assurance department (2019)
- Vice-chancellor assistance of scientific affairs (2019)
- Dean of College of Science, Al-Karkh University of Science (2019-2020)

Fields of interest:

- Organic and inorganic electronics
- Solar cells
- Renewable energies
- Nano-generators
- Diodes
- Detectors
- Composite materials
- Thin films
- Polymer membrane
- Electro-active polymers
- Nanomaterials
- Chemical and biological sensors

Key Skills:

- Scanning electron microscope (SEM)
- Atomic force microscope (AFM)
- X-Ray diffraction (XRD)
- Coating.
- UV-Visible spectroscopy.
- Florescence spectroscopy

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- Ultrasound Pulse technique with variable frequencies (20KHz-50KHz) for mechanical properties
- Cryostat system.
- AC and DC electrical measurements.
- Sol-Gel method.
- Density and Viscosity measurements.
- Cyclic voltammetry.
- Ellipsometry spectroscopy
- EQE and IPCE measurements
- Sensors preparation and characterisation
- Glove box facilities
- Surface Plasmon Resonance (SPR)
- Solar cell preparation and characterisation
- Detectors preparation and characterisation
- Thin films preparation
- Contact angle measurements
- Nanomaterials preparation

Personal Skills

- Group leader.
- Computer software and hardware.
- Meeting the deadlines.
- Working under pressure.
- Group management and director.

Courses:

- Course Title: Protection from radiation.
  Date and place: 2009 Ministry of Environment / Iraq/ Baghdad.
- Course Title: Qualifying course to learn computer.
  Date and place: 2010 Babylon University / Iraq / Babylon.
- Course Title: Methods of teaching.
  Date and place: 2011 Babylon University / Iraq / Babylon.
- Course Title: Health and safety
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.
- Course Title: English language course
  Date and place: 2013 Sheffield Hallam University, Sheffield, UK.
- Course Title: Finding Information: databases and other online sources
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.
- Course Title: Research Ethics
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.
- Course Title: Ref work
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.

- Course Title: Research Ethics
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.
- Course Title: Poster preparation
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.
- Course Title: Presentation preparation
  Date and place: 2014 Sheffield Hallam University, Sheffield, UK.
- Course Title: Lab view course
  Date and place: 2015 National instrument company UK.
- Course Title: Health and Safety workshop
  Date and place: 2017 College of Science, Babylon University.
- Course Title: Coding the laboratory instruments workshop
  Date and place: 2017 College of Science, Babylon University.
- Course Title: Module workshop
  Date and place: 2018 College of Science, Babylon University.

Certificates:

- Certificate for Computer Maintenance from computer canter in Babylon University
- Certificate for Internet and Computing Core Certification (IC3)
- TOEFL ITP certificate with score (457)
- TOEFL iBT certificate with score equal to (6 from 9) IELTS
- TESOL langue centre certificate, Sheffield Hallam University (Grade A) equal to (7-8 from 9) IELTS
- Certificate of appreciation for chair session from "The 16th International Conference on Materials Science and Engineering. At Brussels, Belgium"
- Certificate of Excellence as member the scientific committee from "The International Conference on Technologies and Materials For Renewable Energy, Environment and Sustainability-TMREES15"
- Associate developer LabVIEW (Core1 & Core 2), National instrument UK& Ireland July 2015
- Several acknowledgments certificates from the Chancellor of Babylon University
- Several acknowledgment certificate from the Dean of College of science, Babylon University
- Acknowledgment certificates from the Minster of Higher Education and Scientific Research

Prizes And Awards:

- The second place in The International Conference on Technologies and Materials for Renewable Energy, Environment and Sustainability, Lebanon (April 2014).
- The third place in MERI and BMRC symposium, Sheffield Hallam University UK (Dec 2015).
- The third place in MERI symposium, Sheffield Hallam University, UK (May 2016).
- Award from the Iraqi Ministry of Higher Education and Scientific Research as one of the best 20 PhD students (the first one) in the UK, (2017).
- Jeremy Laskwaski Prize for Excellence in PhD research, Sheffield Hallam University, UK (2017).

Scientific Researches contributions:

1. Kadem, B., Alfahed, R.F., Al-Asadi, A.S. and Badran, H.A., 2020. Morphological, structural, optical, and photovoltaic cell of copolymer P3HT: ICBA and P3HT: PCBM. Optik, 204, p.164153.
2. Kadem, B., Kaya, E.N., Hassan, A., Durmuş, M. and Basova, T., 2019. Composite materials of P3HT: PCBM with pyrene substituted zinc (II) phthalocyanines: Characterisation and application in organic solar cells. Solar Energy, 189, pp.1-7.
3. Abed, T.H., Kadem, B.Y. and Kadhim, R.G., 2019. Simple Colorimetric Method Using Aqueous Solution to Detect Heavy Metal. Iraqi Journal of Science, pp.28-33.
4. Alfahed, RK Fakher, Kareem K. Mohammad, Munaf S. Majeed, Hussain Ali Badran, Kamal M. Ali, and Burak Yahya Kadem. "Preparation, morphological, and mechanical characterization of titanium dioxide (TiO2)/polyvinyl alcohol (PVA) composite for gamma-rays radiation shielding." In Journal of Physics: Conference Series, vol. 1279, no. 1, p. 012019. IOP Publishing, 2019.
5. Banimuslem, H.A. and Kadem, B.Y., 2018. Fluorinated Chromium Phthalocyanine Thin Films: Characterization and Ammonia Vapor Detection. Chemosensors, 6(4), p.63.
6. Al-hashimi, M.K., Kadem, B.Y. and Hassan, A.K., 2018. Rutile TiO2 films as electron transport layer in inverted organic solar cell. Journal of Materials Science: Materials in Electronics, 29(9), pp.7152-7160.
7. Kadem, B.Y., Kadhim, R.G. and Banimuslem, H., 2018. Efficient P3HT: SWCNTs hybrids as hole transport layer in P3HT: PCBM organic solar cells. Journal of Materials Science: Materials in Electronics, 29(11), pp.9418-9426.
8. Zerfaoui, H., Dib, D. and Kadem, B., 2018. The Simulated Effects of Different Light Intensities on the SiC-Based Solar Cells. Silicon, pp.1-7.
9. Kadem, B.Y., Al-Hashimi, M., Hasan, A.S., Kadhim, R.G., Rahaq, Y. and Hassan, A.K., 2018. The effects of the PEDOT: PSS acidity on the performance and stability of P3HT: PCBM-based OSCs. Journal of Materials Science: Materials in Electronics, pp.1-9.
10. Al-Hashimi, M., Kadem, B., Rahaq, Y., Kadhim, R.G. and Hassan, A., 2018. The effects of solvent treated PEDOT: PSS buffer layer in organic solar cells. Journal of Materials Science: Materials in Electronics, pp.1-8.
11. Şenocak, A., Kaya, E.N., Kadem, B.Y., Basova, T.V., Demirbaş, E., Hassan, A.K. and Durmuş, M., 2018. Synthesis and organic solar cell performance of BODIPY and coumarin functionalized SWCNT or graphene oxide nanomaterials. Dalton Transactions.
12. Ahmet S¸ enocak, Cem G¨ol, Tamara V. Basova, Erhan, Demirbas¸, Mahmut Durmus¸, Hadi Al-Sagur, Burak Kadem, Aseel Hassan, Preparation of Single Wall Carbon Nanotube-Pyrene 3D Hybrid Nanomaterial and Its Sensor Response to Ammonia, Sensors and Actuators B 256 (2018) 853–860.
13. Polyakov, M.S., Basova, T.V., Göksel, M., Şenocak, A., Demirbaş, E., Durmuş, M., Kadem, B. and Hassan, A., 2017. Effect of covalent and non-covalent linking of zinc (II) phthalocyanine functionalised carbon nanomaterials on the sensor response to ammonia. Synthetic Metals, 227, pp.78-86.
14. Kadem, B., Banimuslem, H.A. and Hassan, A., 2017. Modification of morphological and optical properties of ZnO thin film. Karbala International Journal of Modern Science.
15. Hassan, A., Kadem, B. and Cranton, W., 2017. Organic solar cells: study of combined effects of active layer nanostructure and electron and hole transport layers. Thin Solid Films.

16. Parkhomenko, R.G., Sukhikh, A.S., Klyamer, D.D., Krasnov, P.O., Gromilov, S., Kadem, B., Hassan, A.K. and Basova, T.V., 2017. Thin films of unsubstituted and fluorinated palladium phthalocyanines: structure and sensor response toward ammonia and hydrogen. The Journal of Physical Chemistry C, 121(2), pp.1200-1209.
17. Evyapan, M., Kadem, B., Basova, T.V., Yushina, I.V. and Hassan, A.K., 2016. Study of the sensor response of spun metal phthalocyanine films to volatile organic vapors using surface plasmon resonance. Sensors and Actuators B: Chemical, 236, pp.605-613.
18. Kadem, B.Y., Hassan, A.K. and Cranton, W., 2016, July. The effects of organic solvents and their co-solvents on the optical, structural, morphological of P3HT: PCBM organic solar cells. In AIP Conference Proceedings (Vol. 1758, No. 1, p. 020006). AIP Publishing.
19. Kadem, B., Hassan, A. and Cranton, W., 2016. Efficient P3HT: PCBM bulk heterojunction organic solar cells; effect of post deposition thermal treatment. Journal of Materials Science: Materials in Electronics, 27(7), pp.7038-7048.
20. Madugu, M.L., Olusola, O.I.O., Echendu, O.K., Kadem, B. and Dharmadasa, I.M., 2016. Intrinsic doping in electrodeposited ZnS Thin films for application in large-area optoelectronic devices. Journal of Electronic Materials, 45(6), pp.2710-2717.
21. Kadem, B., Göksel, M., Şenocak, A., Demirbaş, E., Atilla, D., Durmuş, M., Basova, T., Shanmugasundaram, K. and Hassan, A., 2016. Effect of covalent and non-covalent linking on the structure, optical and electrical properties of novel zinc (II) phthalocyanine functionalized carbon nanomaterials. Polyhedron, 110, pp.37-45.
22. Basova, T.V., Parkhomenko, R.G., Polyakov, M., Gürek, A.G., Atilla, D., Yuksel, F., Ryabchikova, E.I., Kadem, B.Y. and Hassan, A.K., 2016. Effect of dispersion of gold nanoparticles on the properties and alignment of liquid crystalline copper phthalocyanine films. Dyes and Pigments, 125, pp.266-273.
23. Kadem, B., Hassan, A., Göksel, M., Basova, T., Şenocak, A., Demirbaş, E. and Durmuş, M., 2016. High performance ternary solar cells based on P3HT: PCBM and ZnPc-hybrids. RSC Advances, 6(96), pp.93453-93462.
24. Kadem, B., Hassan, A. and Cranton, W., 2016. P3HT: PCBM-based organic solar cells: the effects of different PCBM derivatives. In 32nd European Photovoltaic Solar Energy Conference and Exhibition-Munich/Germany (pp. 1332-1337).
25. Basova, T.V., Parkhomenko, R.G., Krasnov, P.O., Igumenov, I.K., Kadem, B. and Hassan, A.K., 2015. Gold (III) phthalocyanine chloride: Optical and structural characterization of thin films. Dyes and Pigments, 122, pp.280-285.
26. Kaya, E.N., Basova, T., Polyakov, M., Durmuş, M., Kadem, B. and Hassan, A., 2015. Hybrid materials of pyrene substituted phthalocyanines with single-walled carbon nanotubes: structure and sensing properties. RSC Advances, 5(111), pp.91855-91862.
27. Kadem, B., Cranton, W. and Hassan, A., 2015. Metal salt modified PEDOT: PSS as anode buffer layer and its effect on power conversion efficiency of organic solar cells. Organic Electronics, 24, pp.73-79.
28. Kadem, B. and Hassan, A., 2015. The effect of fullerene derivatives ratio on P3HT-based organic solar cells. Energy Procedia, 74, pp.439-445.

29. Kadem, B.Y., Hassan, A.K. and Cranton, W., 2015. Enhancement of power conversion efficiency of P3HT: PCBM solar cell using solution processed Alq3 film as electron transport layer. Journal of Materials Science: Materials in Electronics, 26(6), pp.3976-3983.
30. Kadem, B., Hassan, A. and Cranton, W., 2015. Performance optimization of P3HT: PCBM solar cells by controlling active layer thickness. In Proceedings of the 31st European photovoltaic solar energy conference and exhibition, EUPVSEC (2015, Hamburg, Germany).
31. Kadem, B.Y., Al-hashimi, M.K. and Hassan, A.K., 2014. The effect of solution processing on the power conversion efficiency of P3HT-based organic solar cells. Energy Procedia, 50, pp.237-245.
32. Burak Kadem, 2014, Preparation of Schottky devices (Al-GaAs &Ni-GaAs) and study of some Photo electronic properties, Journal of Babylon University/Pure and Applied Sciences, 22.
33. Al-Bermany, A.K.J., Kadem, B.Y. and Naser, L.F., 2013. Enhancement Mechanical Properties of Barium Chloride by Adding Copper Chloride using Ultrasonic Technique. Advances in Physics Theories and Applications J, 15.
34. Al-Bermany, A.K.J., Kadem, B.Y. and Kadouri, L.T., 2013. Preparation and study the mechanical properties of CMC/PVA composites by sound waves. J. of Advances in Physics Theories and Applications, 15, pp.11-21.
35. Al-Bermany, J., Kadem, B.Y , Lamis F., 2013, Study of some mechanical properties of PVA/ZnO composite by ultrasonic waves, Journal of Babylon University/Pure and Applied Sciences, 21.
36. Al-Bermany, A.K., Kadem, B.Y., 2012, Study the Rheological and Mechanical Properties of PVA/CuCl2 by Ultrasonic, Chemistry and Materials Research, 2, pp.19-24.
37. Al-Bermany, J., Kadem, B.Y. and Husain, E., 2012. Study the Mechanical Properties of (PVA/Si) Composite Prepared by Casting Method. Ultra Engineer, 1(1).
38. Al-Bermany, A.K. and Kadem, B.Y., 2012. Study the Effect of Iron(III) Chloride on the Viscosity and Conductivity of Polyvinyl Alcohol as an Aqueous Solution at(295. 15 K.). International Review of Physics, 6(1), pp.63-67.
39. Kadem, B.Y., 2012. Ultrasonic Study of Organic-Inorganic Film Composites Prepared by Casting Method. European Journal of Scientific Research, 72(3), pp.414-422.
40. Al-Bermany, A.K., Obiad, R.M. and Kadem, B.Y., 2011. Study the Rheological and Mechanical Properties of PVA/NH4Cl by Ultrasonic. Chemistry and Materials Research, IISTE, 1(1).
41. AL-Bermany, A.K.J., Musa, A.A.O., Kadem, B.Y. and Abbas, M.H., 2011. Preparation organic-metallic compounds from Schiff bases and study so mechanical properties. Journal of Asian Scientific Research, 1(8), p.419.
42. Kadem, B.Y., 2011. Study of some mechanical properties of PVA/TiO2 composite by ultrasonic technique. International Journal of Science and Technology, 1(5), pp.183-188.
43. Rashid, A.K.J. and Kadem, B.Y., 2011. Effect of variable ultrasonic frequencies on some physical properties of Iraqi palm fiber PVA composite. Journal of Asian Scientific Research, 1(7), p.359.
44. Al-Bermany, A.K., Kadem, B.Y., Obiad, R.M. and Nasser, L.F., 2011. Study of some mechanical and rheological properties of PVA/FeCl3 by ultrasonic. International journal of Advanced Scientific and Technical Research, 1(2).
45. Rashid, A.K.J., Jawad, E.D. and Kadem, B.Y., 2011. A Study of Some Mechanical Properties of Iraqi Palm Fiber-PVA Composite by Ultrasonic. European Journal of Scientific Research, 61(2), pp.203-209.

46. Burak Kadem, 2011, Preparation and Study I-V properties for Schottky Devices (Al-GaAs & Ni-GaAs) at forward bias, Journal of Babylon University, 19(5), pp:1933-1938.
47. Burak Kadem, 2009, Prepare and Study the photoelectric properties for Ni (Au) GaAs Schottky Devices, Journal of Babylon College of Education, 1, pp:160-168.

Conferences:

1. World Academy of Science, Engineering and Technology 61, 2012, UAE (Oral).
2. MERI and BMRC symposium (Dec.2013), Sheffield Hallam University, UK. (Poster)
3. The International Conference on Technologies and Materials for Renewable Energy, Environment and Sustainability, TMREES14 (April 2014), Beirut-Lebanon. (Oral)
4. MERI symposium (May.2014), Sheffield Hallam University, UK. (Poster)
5. UK semiconductor conference (July 2014), Sheffield Hallam University, UK. (Oral)
6. 16th International Conference on Materials Science and Engineering, (Oct. 2014), Brussels, Belgium. (Oral)
7. MERI and BMRC symposium (Dec.2014), Sheffield Hallam University, UK. (Poster)
8. Innovations in Large-Area Electronics Conference (innoLAE) (Feb. 2015), Cambridge, UK. (Poster)
9. The International Conference on Technologies and Materials for Renewable Energy, Environment and Sustainability, TMREES15 (April 2015), Beirut-Lebanon. (Oral)
10. 31st European photovoltaic solar energy conference and exhibition (EUPVSEC) (Sep. 2015), Hamburg, Germany. (Oral)
11. UK semiconductor conference (July 2015), Sheffield Hallam University, UK. (Oral and Poster)
12. International Conference on Technologies and Materials for Renewable Energy, Environment and Sustainability, TMREES16 (April 2016), Beirut-Lebanon. (Oral)
13. 32nd European photovoltaic solar energy conference and exhibition (EUPVSEC) (June. 2016), Munich, Germany. (Poster).
14. MERI and BMRC symposium (Dec.2016), Sheffield Hallam University, UK. (Poster)
15. The 2nd specialist conference in Physics, University of Baghdad, College of Science, Physics department, Baghdad, Iraq, April 2018.
16. The International conference of Nanotechnology and advanced materials, University of Technology, Baghdad, Iraq, May 2018.
17. INTERNATIONAL SCIENTIFIC CONFERENCE OF THE UNIVERSITY OF BABYLON (ISCUB-2019).