Curriculum vitae

I- Contact Information:

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II- Employment History

- Assistant Professor at King Saud University from 10/2013 until now.
- Physics lecturer at King Saud University, 1/2007 – 9/2013.
- Physics and optical fiber teacher, College of Telecommunication and Information, Riyadh, from 9/2001to 1/2007.
- Full-time consultant for King Abdulaziz City for Science and Technology (KACST) from 2016 to 2019.

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III- Education and qualifications:

- 10/09-05/13 New Route PhD in Organic Nanoelectronics, Sheffield University, UK.
- 09/08-09/09 MSc in Nanoelectronics and Nanomechanics, Sheffield University, UK, obtained with Merit.
- 09/01-02/04 MSc in physics (with distinction 4.5 out of 5), King Saud University, Saudi Arabia.
- 09/91-02/96 BSc in Physics, King Saud University, Saudi Arabia.

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IV- Patents and research awards:

- The winner of King Saud University Prize for Translation 2018.
- Hadi R AlQahtani and Martin Grell. (2016). Method for Chemical Vapor Identification Using Swelling-Based Sensors. US Patent 9,459,223 B1
- ii- MAGNETO-RESISTIVE FIELD EFFECT TRANSISTOR. https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2014199144
- iii- Research visit to Sheffield University in summer 2015 for learning about "applying digital lock-in amplifier in high resolution measurements'.
- iv- Summer research scholarship for 12 weeks obtained from KACST to work in Sheffield University during summer 2014.

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V- Selected Publications

1. Hadi Rasam AlQahtani, Abdel-Basit M Al-Odayni, Mostafa Zeama, Osama Shekhah, Mohamed Eddaoudi, Martin Grell. Metal-organic frameworks as sensitisers for potentiometric sensors. *Microchemical* **2024**, 201, 101547. https://doi.org/10.1016/j.microc.2024.110547
2. AlQahtani, H.R.; Al-Odayni, A.-B.M.; Alhamed, Y.; Grell, M. Bridged EGFET Design for the Rapid Screening of Sorbents as Sensitisers in Water-Pollution Sensors. *Sensors* **2023**, *23*, 7554. https://doi.org/10.3390/s23177554
3. Hussein, Z., Khan, W., Laref, A., Alqahtani, H., Booq, Z., Alsalamah, R., Ahmed, A., Nya, F. T., Chowdhury, S., El Amine Monir, M., Kumar, A., Huang, H., Xiong, Y., & Yang, J. (2023). Al/Si dopants effect on the electronic and optical behaviors of graphene mono-layers useful for infrared detector devices. *Journal of Electron Spectroscopy and Related Phenomena*, *264*, 147296. https://doi.org/10.1016/j.elspec.2023.147296
4. Kushwaha, A., Khan, W., AlQahtani, H., Laref, A., Amine Monir, M. E., Nya, F. T., Chowdhury, S., Alghamdi, E. A., Huang, H., Xiong, Y., & Yang, J. (2023). First-principles assessments of the electronic, and magneto-optical characteristics of Fe–Mn co-doped anatase TiO2 for photo-catalysis applications. *Solid State Communications*, *360*, 115059. https://doi.org/10.1016/j.ssc.2022.115059
5. Al-Amer, R., Khan, W., Laref, A., AlQahtani, H., Murtaza, G., Mahmood, Q., Tchangnwa Nya, F., Chowdhury, S., Amine Monir, M. E., Alghamdi, E. A., Huang, H., Xiong, Y., & Yang, J. (2023). The carriers doping effect on electronic and optical behaviors of newly layered Sr1- xHfxFBiS2 alloying materials for light-modulator devices. *Journal of Physics and Chemistry of Solids*, *173*, 111097. https://doi.org/10.1016/j.jpcs.2022.111097
6. Aldosary, A. F., Shar, M. A., & AlQahtani, H. R. (2022). High-sensitivity detection of ethane and ethylene using gamma-irradiated ZnO chemiresistors. *Measurement: Sensors*, *24*, 100600. https://doi.org/10.1016/j.measen.2022.100600
7. Li, W., Saleh, A., Sharma, M., Hünecke, C., Sierka, M., Neuhaus, M., Hedewig, L., Bergues, B., Alharbi, M., ALQahtani, H., Azzeer, A. M., Gräfe, S., Kling, M. F., Alharbi, A. F., & Wang, Z. Resonance Effect in Brunel Harmonic Generation in Thin Film Organic Semiconductors. *Advanced Optical Materials*, 2203070. https://doi.org/10.1002/adom.202203070
8. Al Baroot, A.; Drmosh, Q. A.; Alade, I. O.; Elsayed, K. A.; Alheshibri, M.; Kotb, E.; AlQahtani, H. R.; Al Qahtani, H. S. (2022). Investigating the antibacterial activity of nanostructured tungsten oxide prepared by pulsed laser ablation at different hydrogen peroxide concentrations. Optical Materials 133, 112886.
9. Saleh, A.; Li, W.; AlQahtani, H.; Neuhaus, M.; Alshehri, A.; Bergues, B.; Alharbi, M.; Kling, M. F.; Azzeer, A. M.; Wang, Z.; Alharbi, A. F. (2022). Fifth-order nonlinear optical response of Alq3 thin films. Results in Physics 37, 105513.
10. AlQahtani, H.; Alswieleh, A.; Al-Khurayyif, I.; AlGarni, S.; Grell, M. Parallel Potentiometric and Capacitive Response in a Water-Gate Thin Film Transistor Biosensor at High Ionic Strength. Sensors **2021**, 21, 5618. https://doi.org/10.3390/s21165618
11. Alhanouf A. Alrwais and Hadi R. AlQahtani. (2020). Controlled magnetic behaviour of $Ni_{80}Fe_{20}$ nanowire by a selection of nucleation pads. Journal of King Saud University - Science Journal of King Saud University - Science Vol. 32, Pages 3039-3044.
12. A. Laref**,** M. Al-Enazi, **H. R. Al-Qahtani**, S. Laref, and Xiaozhi Wu. Impact of fluorine on organic cation for determining the electronic and optical properties of CH3−xFxNH3PbI3 (x = 0, 1, 2, 3) hybrid perovskites-based photovoltaic devices. Sol En 177, 517 (2019).
13. N. Madkhali**, H. Alqahtani**, A. Haseeb, H. Albrithin, S. Alterary, and A. Laref. Systematic Investigation of the Electrochemical Properties of Natural Melanin for Various Electrode Cells. J. Bio. Mat and Bioenergy **13**, 429 (2019).
14. N. Madkhali, **H. R. Alqahtani**, Seham Al-Terary, A. Laref, and A. Haseeb. The doping effect of Fe, Cu and Zn ions on the structural and electrochemical properties and the thermostability of natural melanin extracted from Nigella sativa L. J. Mol. Liq **285**, 436 (2019).

15. A. Laref, N. Madkhali, **H. R. Alqahtani**, X. Z. Wu, and S. Laref. Electronic structures and optical spectroscopies of 3d-transition metals-doped melanin for spintronic devices application. JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS **491**, 165513 (2019).
16. N. Madkhali, **H. R. Alqahtani**, Seham Al-Terary, A. Laref, and A. Haseeb. Control of optical absorption and fluorescence spectroscopies of natural melanin at different solution concentrations. Optical and Quantum Elec **51**, 227 (2019).
17. **AlQahtani, H.**, Bryan, M.T., Hayward, T.J., Hodges, M.P., Im, M.-Y., Fischer, P., Grell, M., Allwood, D.A. (2014) Planar organic spin valves using nanostructured Ni80Fe20 magnetic contacts. Organic Electronics 15(1):276–280.
18. Morley, N.A., **AlQahtani, H.**, Hodges, M.P., Gibbs, M. R. J., Grell, M. and Morgan, D. J. (2013) Study of polymer-magnetic electrode interfaces using XPS. Applied Surface Science, 265, 570-577.
19. Liu, C-Y, **AlQahtani, H.**, Grell M., Allwood, D.A., Gibbs, M.R.J and Morley NA. (2013). Interfacial studies of polymeric spin-valve structures. Synthetic Metals. 173:51–56.
20. **AlQahtani, H,** Puzzovio D, Dragoneas A, Richardson T, Grell M. 2012. A swelling-based chemiresistor for a biogenic odour. Talanta. 99(15):50–54.
21. **AlQahtani, H.,** Alduraibi, M., Richardson, T., Grell, M., (2012). Manifold sensitivity improvement of swelling-based sensors. Phys Chem Chem Phys. 14:5558-5560.
22. **AlQahtani, H,** Sugden M, Puzzovio D, Hague L, Mullin N, Richardson T, Grell, M. 2011. Highly sensitive alkane odour sensors based on functionalised gold nanoparticles. Sensors and Actuators B: Chemical. 160(1):399-404.
23. Morley, N.A., Dhandapani, D., Rao, A., **AlQahtani, H.**, Gibbs, M.R.J., and Grell, M.

"Polymeric spin-valves at room temperature" Synthetic Metals, 161, 558-562 (2011) .

24. Stansfield, GL, Vanitha PV, Johnston HM, Fan D, **AlQahtani, H.,** Hague L, Grell M, Thomas JP. (2010). Growth of nanocrystals and thin films at the water-oil interface. Philosophical Transactions of the Royal Society A-Mathematical Physical and Engineering Sciences. 368:43134330.
25. Aldwayyan, A. S., **AlQahtani, H.**, Alsalhi, M., and Raja, M.Y.A., (2004). Characteristics of GaAs/AlGaAs vertical-cavity surface-emitting lasers irradiated with gamma rays," Journal Of Optical Engineering, Sep. 2004,Vol. 43, I. 9, pp. 2184-2192.