PERSONAL INFORMATION

Dr Hassan Ali

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Google Scholar: https://scholar.google.com/citations?user=_pEgzUIAAAAJ&hl=en

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Sex: Male | Date of birth: 17 August 1988 | Nationality: Pakistani

Education and Training

Jan 2017- Jan 2021 **PhD in Applied Science**
Specialization in Applied Physics
Universiti Teknologi Petronas, Malaysia
Specialization: Enhanced oil recovery, Nanotechnology, electromagnetics
Thesis Title: *Experimental and simulation studies of electromagnetically activated multiferroic-based nanofluids for Application in Enhanced Oil Recovery*

Mar 2010 -Mar 2013 **MPhil Applied Physics**
University of Engineering and Technology, Lahore
Specialization: Nanotechnology, Laser Techniques and Applications
Thesis title: *Synthesis and Characterization of Ni and NiO Nanowires*

Sep 2005 – Sep 2009 **B.Sc. (Hons) Physics**
University of the Punjab, Lahore
Specialization: Material science, Synthesis of Conducting polymers
Thesis Title: *Synthesis and Characterization of Polyaniline (a conducting polymer)*

Feb 2014 - May 2016 **Bachelor of Education**
University of the Punjab, Lahore

Sep 2003 – Aug 2005 **Intermediate (Pre-Engineering)**
Board of Intermediate and Secondary Education

Work Experience

Dec 2021 – Cont. **Assistant Professor (Head of Department)**

Department of Physics, University of Narowal

- Working as head of department (coordinator) for administrating all activities in the department.
- Supervising M.Phil Physics students to conduct their research projects.
- Teaching various subjects to undergraduate and master students.
- Developing curriculum for undergraduate students.
- Establishing simulation and research lab for master students.
- Supervision of undergraduate and graduate students for research

Feb 2021 – Dec 2021 **Assistant Professor Visiting Faculty**

University of Narowal

Jan 2017 – Dec 2020 **Graduate Assistant (GA)**

Universiti Teknologi Petronas

Teaching tutorials of various subjects and conducting labs for undergraduate students during PhD as a Graduate Assistant. Specifically, I have taught following subjects.

- Physics Practical I & II (Electromagnetics Lab)
- Measurement and Instrumentation Lab
- Final Year Project I
- Final Year Project II
- Science Team Project

Jun 2010 – May 2011 **Lecturer**

Government Shalimar College, (NIP Internship program)

Taught the subject of physics to the students of intermediate and undergraduate levels and conducted the labs of physics.

Languages

Mother tongue Urdu

Other Language(s) English

Punjabi

Certifications/Courses/Workshops

05-07-2023	An Introduction to Peer review	Web of Science Academy, Clarivate
07-04-2023	University Teaching Certificate	The University of Hongkong https://www.coursera.org/account/accomplishments/verify/BEN4D6KU9KJU
02-02-2022	Two day workshop on "Promoting Research Excellence in Academics across Pakistan"	Higher Education Commission, Pakistan
03-03-2021	Programming for Everybody (getting started with Python)	University of Michigan Coursera verification (C3224N836P7B)
08-04-2021	Python Data structures	University of Michigan

		Coursera verification (833BGUZS53KA)
18-04-2021	Using Python to access web data	University of Michigan Coursera verification (D3YTWRDBV6QY)
28-04-2021	Using databases with Python	University of Michigan Coursera verification (WLPYPE65Q2KP)
29-04-2021	Capston: Retrieving, Processing and Visualiztion data with Python	University of Michigan Coursera verification (ANYEY4K7TAAD)

Research Experience & Skills

Two-year research experience at advanced physics lab UET Lahore in "Nanowires synthesis by electrochemical deposition method and characterization". Four years of research experience at Universiti Teknologi Petronas, in the Enhanced oil recovery lab in the following areas.

- Synthesis of various nanoparticles for their applications in oil recovery.
- Core-flooding experimental techniques for EOR
- Advanced material characterization techniques like XRD, FESEM, VSM and FTIR.
- Fluid dynamics and Electromagnetics on COMSOL Multiphysics software.
- Material Studio
- Computational Simulation Technique (CST) software.
- Microsoft office suite
- MATLAB
- Python
- Image Processing Software (MeshLab, ImageJ, Irfan view)

Scholarships and Awards

Jan 2017	Category A Merit Graduate Assistantship Award in UTP
Apr 2019	UTP Graduate Research Assistantship Award
28th Nov 2017	Bronze medal in 40th Science and Engineering Design Exhibition held at Universiti Teknologi Petronas

Workshops and Seminars

Year	**Workshop/Seminar**	**Organizer**
2022	Two-day workshop on "Promoting Research Excellence in Academics across Pakistan	HEC, Elsevier
2019	Elsevier's database training workshop	Elsevier
2019	Web of Science workshop	Clarivate Analytics
2018	Hands-on Training Course on LaTeX	IEEE UTP Student Branch
2018	Certificate of Participation	ESTCON 2018
2018	Course on advanced training for Material Studio	Maleja corporation SDN BHD
2017	Active Learning Training	CETAL & CGS at UTP
2017	COMSOL Seminar	i-Math
2013	International Scientific Spring	National Centre of Physics
2012	12th International Symposium on Frontiers in Physics	UET Lahore
2011	Workshop on Nanotechnology	National Centre of Physics, Islamabad

Extracurricular activities

2018 Elected president of UTP Pakistan Students Committee

2012 Best sportsperson in departmental sports in UET, Lahore

List of Publications

1. **Ab Initio Calculation of Half-Metallicity, Magnetic and Transport Properties of Potassium-Based KLAO2 (La = Ho3+, Tm3+, Yb3+) Oxides for Spintronics Devices.** Parveen, A., Makhdoom, M.M., Ismail, K., Murtaza, G., **Ali, H.,** Shah, K.H., El-Gawaad, N.A. and Abbas, S.M., (2025). Journal of Electronic Materials (IF-2.2) https://link.springer.com/article/10.1007/s11664-025-11919-2

2. **First principles investigation of structural, electronic, optical, transport properties of double perovskites X2TaTbO6 (X= Ca, Sr, Ba) for optoelectronic and energy harvesting applications.** Ishfaq, M., Urooj, M., Sajid, M., Ismail, K., Baqeel, R., Khera, E.A., Khan, R., Al Otaibi, S., Althubeiti, K., **Ali, H.** and Murtaza, G., (2025). Journal of Physics and Chemistry of Solids (IF-4.9) https://www.sciencedirect.com/science/article/abs/pii/S0022369724005675

3. **Theoretical calculation of structural, electronic, magnetic, and thermoelectric properties of KMO2 (M= Sm3+, Tb3+, and Dy3+) oxides by ab initio method.** Ismail, K., Parveen, A., **Ali, H.**, Ali, A., Murtaza, G., Bukhari, S. A. Z., & Abbas, M. S. (2024). Inorganic Chemistry (IF-4.7) https://chemrxiv.org/engage/chemrxiv/article-details/668db4e001103d79c58887d3

4. **First principles investigation of double perovskites X2TaTbO6 (X= Ca, Sr, Ba) of Structural, electronic, optical, transport properties for optoelectronic application for energy harvesting.** Ishfaq, M., Urooj, M., Sajid, M., Ismail, K., Baqeel, R., Khera, E.A., Khan, R., Al Otaibi, S., Althubeiti, K., **Ali, H.** and Murtaza, G., (2024) Journal of Physics and Chemistry of Solids (IF-4.9) https://www.sciencedirect.com/science/article/abs/pii/S0022369724005675

5. **Theoretical investigation of double perovskite A2NbTbO6 (A= Ca, Sr, Ba) for optoelectronic applications under DFT approach.** Ali, S., Ali, H.S., Ismail, K., Iftikhar, A.R., **Ali, H.** and Raza, H.H., 2024. Optical and Quantum Electronics, 56(7), pp.1-15. (IF-4.0) https://link.springer.com/article/10.1007/s11082-024-07077-0

6. **First principles study of the structural, half-metallic ferromagnetism, magnetic, and transport properties of KXO2 (X= Pr, Nd, and Pm) hexagonal oxides.** Tariq B, Murtaza G, **Ali H,** Razzaq S, Khalil RA, Hussain MI, Ismail K, Nazir G, Alotaibi NH. Solid State Communications. (IF-2.4) https://www.sciencedirect.com/science/article/abs/pii/S0038109823001667

7. **Enhanced solar-driven water splitting by ZnO/CdTe heterostructure thin films-based photocatalysts.** Riffat, M., **Ali, H.**, Qayyum, H A., Bilal, M., & Hussain, T. (2023). International Journal of Hydrogen Energy (IF-8.3) https://www.sciencedirect.com/science/article/pii/S0360319923010820?dgcid=coauthor

8. **Synthesis of Ni and NiO nanowires on nanoporous Alumina templates and their characterization.** **Ali, H.**, Shahzadi, S., Hussain, K., Shahbaz, M., Niaz, U., Tariq, U., ... & Hussain, T. (2022). Applied Science and Technology Express, 2022, 1-11. https://www.htpub.org/article/Applied-Science-And-Technology-Express/vol/2022/num_method/yes/articleid/1080

9. **Dynamics and geometry effects on the capillary flows in porous media for enhanced oil recovery.** Soleimani, H., **Ali, H.**, Yahya, N., Khodapanah, L., Sabet, M., Demira, B. M., & Kozlowski, G. (2021). In Defect and Diffusion Forum (Vol. 413, pp. 77-83). (IF 0.66)
https://www.scientific.net/DDF.413.77

10. **Experimental investigation and two-phase flow simulation of oil and nanofluids on micro CT images of sandstone for wettability alteration of the system**
Ali, H., Soleimani, H., Yahya, N., Khodapanah, L., Kozlowski, G., Sabet, M., Demiral, B.M., Adebayo, L.L. and Hussain, T., (2021)
Journal of Petroleum Science and Engineering (IF 3.706)
https://www.sciencedirect.com/science/article/pii/S0920410521003259

11. **A simple route to prepare Fe3O4@C microspheres as electromagnetic wave absorbing material** Adebayo, L. L., Soleimani, H., Guan, B. H., Öchsner, A., Sabet, M., Yusuf, J. Y., & **Ali, H.** (2021) Journal of Materials Research and Technology (IF 5.289)
https://www.sciencedirect.com/science/article/pii/S2238785421003215

12. **Assessment of In-Depth Transport and Retention of Zinc Oxide Nanoparticles Using a Coreflood Approach.** Hamza, M. F., Soleimani, H., Ahmed, A. A., & **Ali, H.** (2021). In Proceedings of the 6th International Conference on Fundamental and Applied Sciences: ICFAS 2020 (pp. 337-346). Springer Singapore.
https://link.springer.com/chapter/10.1007/978-981-16-4513-6_29

13. **Simulation and Experimental Study for Electromagnetic Absorption in Sandstone with SrFeO 3 Nanofluid.** **Ali, H.,** Soleimani, H., Yahya, N., & Hamza, M. F. (2021). In Proceedings of the 6th International Conference on Fundamental and Applied Sciences: ICFAS 2020 (pp. 393-401). Springer Singapore.
https://link.springer.com/chapter/10.1007/978-981-16-4513-6_34

14. **Enhanced oil recovery by using electromagnetic-assisted nanofluids: A review**
Ali, H., Soleimani, H., Yahya, N., Khodapanah, L., Sabet, M., Demiral, B. M., ... & Adebayo, L. L. (2020) Journal of Molecular Liquids (IF 5.065)
https://www.sciencedirect.com/science/article/pii/S0167732220302476

15. **Transport Modelling of Multi-Phase Fluid Flow in Porous Media for Enhanced Oil Recovery** H Soleimani, **H. Ali**, N Yahya.(2020), Defect and Diffusion Forum (IF 0.66)
https://www.scientific.net/DDF.400.38

16. **Recent advances in the development OF Fe3O4-BASED microwave absorbing materials,** Adebayo, L. L., Soleimani, H., Yahya, N., Abbas, Z., Wahaab, F. A., Ayinla, R. T., & **Ali, H.** (2020) Ceramics International (IF 3.83)

https://www.sciencedirect.com/science/article/pii/S0272884219327464

17. **Absorption of electromagnetic waves in sandstone saturated with brine and nanofluids for application in enhanced oil recovery,** **Ali, H**., Soleimani, H., Yahya, N., Lorimer, S., Sabet, M., Demiral, B. M., & Adebayo, L. L. (2020).
Journal of Taibah University for Science (IF 1.863)
https://www.tandfonline.com/doi/full/10.1080/16583655.2020.1718467

18. **Finite element method for modelling of two-phase fluid flow in porous media**
Ali, H., Soleimani, H., Yahya, N., Baig, M. K., & Rostami, A. (2018, November)
Journal of Physics Conference Series (IF 0.54)
https://iopscience.iop.org/article/10.1088/1742-6596/1123/1/012002

19. **Electronic polarization of zinc nitride nanoparticles for interfacial tension reduction in enhanced oil recovery**
Baig, M. K., Soleimani, H., Yahya, N., **Ali, H**., & Rostami, A. (2018, November)
Journal of Physics Conference Series (IF 0.54)
https://iopscience.iop.org/article/10.1088/1742-6596/1123/1/012003

Conferences

- Invited Speaker 2nd International Conference on Emerging Trends in Physics, 2025, University of Management and Technology, Lahore, Pakistan
- Invited Speaker 1st International Conference on Emerging Trends in Physics, 2024, University of Management and Technology, Lahore, Pakistan
- International conference on fundamental and applied sciences (ICFAS-2021)
- International conference on fundamental and applied sciences (ICFAS-2018), 2018, Kuala Lumpur Convention Centre, Malaysia.
- 15th International Conference on Diffusion in Solids and liquids – DSL2019. Athens, Greece.

Book Chapters

- Two-phase flow simulation of oil and brine in porous media with network modelling, PUBLISHED BY UTP PRESS, ISBN 978-967-2048-26-8.