

# KUMARESH HALDER (Ph.D.)

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<https://scholar.google.co.in/citations?user=wmX94WQAAAAJ>



## PROFESSIONAL SUMMARY

- 4 year and 6 months of full-time teaching experience as an Assistant Professor of Physics in the Department of Basic Science and Humanities (BSH) for UG students since 16.01.2021 under Regent Education and Research Foundation (RERF) Group of Industries, Kolkata, India.
- 5 years of part-time teaching experience as a Guest Lecturer in the Department of Electronics for PG students under West Bengal State University.
- 8 years of independent research experience in the field of composite synthesis and characterization. Have experience with the operation of characterization tools including XRD, FTIR, DTA/TGA, and LCR Meter.

## EDUCATION

### JADAVPUR UNIVERSITY

December, 2016

Doctor of Philosophy (Ph.D.), Department of Physics, SGPA: 10/10

Advisor: Dr. Sukhen Das, co-advisor: Dr. Alakananda Bhattacharya

Thesis Title: 'Development and Characterization of Transition Metal Doped Aluminosilicate and Their Polymeric Nano Composites: Study of Their Electrical Properties and Possible Applications.'

Relevant Course Works: Production of low temps. and low temp. properties of materials, Biophysics.

### WEST BENGAL STATE UNIVERSITY

August, 2012

Master of Science, Department of Electronics, CGPA: 4.68/5

Advisor: Dr. Arijit Roy

Thesis Title: "Development of Digital Opismeter For Curvy Length Measurement."

### UNIVERSITY OF CALCUTTA

July, 2010

Bachelor of Science, Department of Electronics, CGPA: 5.65/10

Major: Electronics (Honors), Minor: Computer Science, Mathematics.

### WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION

May, 2007

Higher Secondary Examination, Percentage: 66.40%

Subjects: Language: Bengali (A), English (B), Compulsory Elective: Chemistry, Mathematics, Physics, Optional Elective: Biological Sciences.

### WEST BENGAL BOARD OF SECONDARY EDUCATION

May, 2005

Secondary Examination, Percentage: 74.25%

Subjects: Language Group: Bengali (FL), English (SL), Science Group: Mathematics, Physical Science, Life Science, India & Her People Group: History, Geography.

## PhD PUBLICATIONS

1. Roy, D., Haldar, K., Paul, B. K., Bhattacharya, A., Das, S., & Nandy, P. (2013). Reduced Activation Energy of Iron and Copper Ion Doped Mullite which Can Be Used as a Substrate in Electronic Industry. Journal of Surface

Engineered Materials and Advanced Technology, 3(1), 11–17. <https://doi.org/10.4236/jsemt.2013.33A003>

2. Roy, D., Halder, K., Paul, B.K., Bagchi, B., Bhattacharya, A., Das, S., & Nandy, P. (2013). Study of densification of sol-gel derived mullite due to excess iron, nickel and copper ions. *Ceramics – Silikáty*, 57(3), 219–224.
3. Paul, B.K., Halder, K., Roy, D., Bagchi, B., Bhattacharya, A., & Das, S. (2014). Abrupt change of dielectric properties in mullite due to titanium and strontium incorporation by sol–gel method. *Journal of Advanced Ceramics*, 3(4), 278–286. <https://doi.org/10.1007/s40145-014-0119-8>
4. Paul, B.K., Halder, K., Roy, D., Bagchi, B., Bhattacharya, A., & Das, S. (2014). Dielectric switching above a critical frequency occurred in iron mullite composites used as an electronic substrate. *Journal of Materials Science: Materials in Electronics*, 25(12), 5218–5225. <https://doi.org/10.1007/s10854-014-2291-6>
5. Halder, K., Paul, B.K., Bagchi, B., Bhattacharya, A., & Das, S. (2014). Copper ion doped mullite composite in poly (vinylidene fluoride) matrix: Effect on microstructure, phase behavior and electrical properties. *Journal of Research Updates in Polymer Science*, 3(3), 157–169. <https://doi.org/10.6000/1929-5995.2014.03.03.3>
6. Halder, K., Paul, B.K., Roy, D., Bhattacharya, A., & Das, S. (2015). High-K tungsten-mullite composite for electronic industrial application: Synthesis and study of its microstructure, phase behavior and electrical properties. *Journal of Materials Science: Materials in Electronics*, 26(2), 1172–1180. <https://doi.org/10.1007/s10854-014-2521-y>
7. Ganguly, S., Halder, K., Haque, N. A., Das, S., & Dastidar, S.G. (2015). A comparative study between electrical properties of bulk and synthesized nano material of zinc sulphide. *American Journal of Research Communication*, 3(3).
8. Halder, K., Roy, D., & Das, S. (2015). A comparative electrical study of nano-crystalline mullite with low dielectric loss due to incorporation of tungsten and molybdenum ion: Their uses in electronic industries. *Journal of Materials Science: Materials in Electronics*, 26(8), 5803–5811. <https://doi.org/10.1007/s10854-015-3139-4>
9. Halder, K., Paul, B.K., Bhattacharya, A., & Das, S. (2016). Influence of nickel ion doped mullite composite on electrical properties, phase behavior and microstructure of poly (vinylidene fluoride) matrix. *Journal of Polymer Research*, 23(133), 1–11. <https://doi.org/10.1007/s10965-016-1027-0>

## POST PhD PUBLICATIONS

10. Mandal, D., Chattopadhyay, H., Karmakar, A., & Halder, K. (2018). Finite element approach towards impact analysis on biomechanical nature of cornea. *Biomedical Research Info*, 29(12) 2465–2470. <https://doi.org/10.4066/biomedicalresearch.29-16-1650>
11. Mandal, D., Bag, S., Sikdar, S. & Halder, K. (2023). Extraction and characterization of acid soluble collagen type I from Sperata aor. *Journal of Emerging Technologies and Innovative Research (JETIR)*, 10(1), 136–140. ISSN: 2349-5162
12. Mandal, D., Chattopadhyay, H., & Halder, K. (2023). Constitutive modelling of human cornea through fractional calculus approach. *Physics of Fluids*, 35(3), 031907. <https://doi.org/10.1063/5.0138730>
13. Mandal, D., Chattopadhyay, H., & Halder, K. (2023). Development of silica-collagen hybrid as corneal substitute through sol-gel route. *BioNanoScience*, 13(8), 2441–2447. <https://doi.org/10.1007/s12668-023-01146-6>

## BOOK/BOOK CHAPTER PUBLICATIONS

1. Halder, K., Mandal, D., Ganguly, K., Sikdar, S., & Bag, S. (2022). The effects of metal ion doped ceramic fillers into poly (vinylidene fluoride) matrix: A comparative investigation and its application in micro-electronics industry. In *Applications of Networks, Sensors and Autonomous Systems Analytics. Studies in Autonomic, Data-Driven and Industrial Computing* (pp. 309–324). Springer. [https://doi.org/10.1007/978-981-16-7305-4\\_31](https://doi.org/10.1007/978-981-16-7305-4_31)
2. Halder, K., Mandal, D., Mallick, A., Das, S., & Roy, A. (2025). Electrochemical Study of Graphitic Oxide and Reduced Graphene Oxide Emphasizing on their Defect Densities. *Trends in Materials Science & Mechanical Engineering* (pp. 63–74). OrangeBooks Publication. ISBN No. 9789365549591.

## CONFERENCE PROCEEDINGS

- 1<sup>ST</sup> International Workshop on Nanomaterials (IWoN): ENGINEERING PHOTON AND PHONON TRANSPORT, Organized by Jadavpur

**14-15 December, 2012**

University.

- International Conference on Applications of Networks, Sensors and Autonomous System Analytics (ICANSASA 2020), Organized by JIS College of Engineering.
- International conference on Materials Science and Mechanical Engineering (ISMSME 2023), Organized by Regent Education and Research Foundation.

**11-12 December, 2020**

**19-20 January, 2023**

## **WORKSHOP & SEMINAR ATTENDED**

- National Seminar on Computing with Quantum Mechanics Organized by Department of Electronics, West Bengal State University.
- One Day UGC-CPE Funded Faculty Enrichment Workshop Organized by Internal Quality Assurance Cell (IQAC) and Department of Electronic Science, Barrackpore Rastraguru Surendranath College.
- International Seminar on Reliability: Electronic Components to Systems, Organized by Department of Electronics, West Bengal State University.

**15 February, 2016**

**22 February, 2019**

**24 April, 2019**

## **STTP & FDP PARTICIPATED**

- AICTE Sponsored STTP (Online) on Advanced Technology to Bridge the Gap between Medical Science and Engineering for the Benefit of Mankind, Organized by- Department of Biomedical Engineering, JIS College of Engineering, Kalyani.
- Computer Society of India (CSI) sponsored FDP (Online) on The Future of Generative AI in Academic Research and Publishing, Organized by- Department of Computer Application & Science, Institute of Engineering & Management, Kolkata.
- IEEE Photonics Society Sponsored FDP (Online) on Present Scenario of Lighting Sector: Industry 4.0, Organized by- Department of Electrical Engineering, Gargi Memorial Institute of Technology, Baruipur, Kolkata.
- AICTE Sponsored FDP (Offline) under the scheme of ATAL Academy on Nano Technology, Materials & Science, Organized by- Department of Mechanical Engineering & School of Materials Science & Nanotechnology, Jadavpur University, Kolkata.
- NPTEL-AICTE FDP (A 12-week course followed by proctored exam) funded by MoE, Govt. of India on Carbon Materials and Manufacturing with a consolidated score of 58%.
- AICTE Sponsored FDP (Online) under the scheme of ATAL Academy on Future Tech Revealed: Semiconductors, Quantum Computing, and Data Storage Insights, Organized by- COEP Technological University, Maharashtra.
- AICTE Sponsored FDP (Online) under the scheme of ATAL Academy on Semiconductor, Organized by- ABACUS Institute of Engineering and Management, West Bengal.
- AICTE Sponsored FDP (Online) under the scheme of ATAL Academy on Semiconductor, Organized by- Sri Eshwar College of Engineering, Tamil Nadu.

**23-28 August, 2021**

**2-6 January 2024**

**Jan 26- Feb 01, 2024**

**19-24 February, 2024**

**January- April 2024**

**20-25 January, 2025**

**27 January– 1 February 2025**

**17- 22 February, 2025**

## **JOURNAL REVIEW AND EDITORIAL SERVICE**

### **REVIEWER**

- Journal of Surface Engineered Materials and Advanced Technology, Scientific Research Publishing.
- Helion, Cell Press Publishing.

## PAPER(S) REVIEWED

1. Pin - on - Disc Study of Tribological Performance of PVD Coatings, Mária Hagarová, Dagma Jakubéczyová, Martin Fides, Marek Vojtko, Jarmila Savková. Paper ID: 1180375, **2017**.
2. Darcy-Forchheimer slip flow featuring viscoplastic (Casson) model subjected to diffusion of chemically reactive species. HELIYON-D-23-14679. Heliyon, Cell Press Publication, **2023**.

## ACADEMIC EXPERIENCE

- Assistant Professor of Physics in the Department of BSH (UG), Regent Education and Research Foundation (RERF).
- Guest Lecturer in the Department of Electronics (PG), West Bengal State University, Barasat.

**January 2021- Present**

**August 2017- December 2021**

## MEMBERSHIP OF LEARNED SOCIETIE(S)

Life Member, Society for Materials Chemistry (SMC), BARC  
Life Member, Biomedical Engineering Society of India (BMESI)

## ACADEMIC HONORS AND AWARD

- Awardee of UGC Basic Scientific Research (BSR) Fellowship in Science.
- Bronze Medal granted for securing 2<sup>nd</sup> position in the Department of Electronics, Bhairab Ganguly College.

**19 June- 18 June, 2016**

**September, 2010**