

# University Department of Physics

## BBMKU, Dhanbad

### Faculty Profile



1. Name: **Dr. UMAMAGESWARI**  
2. Designation: **Associate Professor & Head, University  
Dept. of Physics, BBMKU Dhanbad**

E-Mail: **bbmkuhodphysics@gmail.com**

3. Professional Experience:

- **Associate Professor & Head**, University Department of Physics | *BBMKU, Dhanbad*  
(01 August 2025 – Present)
- **Principal In-Charge** | *Bokaro Steel City College, Bokaro*  
(01 January 2024 – 31 July 2025)
- **Associate Professor in Physics** | *Bokaro Steel City College, Bokaro*  
(19 November 2009 – 31 July 2025)
- **Assistant Professor in Physics** | *Bokaro Steel City College, Bokaro*  
(20 September 2001 – 18 November 2009)
- **Assistant Professor in Physics** | *RSP College, Jharia*  
(19 November 1996 – 19 September 2001)

4. Teaching experience: P. G.: 6 Years U. G.: 30 Years  
5. Date of Substantive appointment: 19/11/1996  
6. Academic record:

| Degree           | Div. / Class          | Subject(s)                                               | Year of Passing | % of marks | College / University                 |
|------------------|-----------------------|----------------------------------------------------------|-----------------|------------|--------------------------------------|
| Matriculation    | Distinction           | Tamil, English, Maths, Science, History, Geography       | 1982            | 86%        | Tamilnadu State Board                |
| Higher Secondary | Distinction           | Tamil, English, Physics, Chemistry, Mathematics, Biology | 1984            | 76.4%      | Tamilnadu State Board                |
| Graduate         | 1 <sup>st</sup> Class | Physics                                                  | 1987            | 70%        | Bharathidasan University, Tamil Nadu |

|               |                       |         |      |         |                                          |
|---------------|-----------------------|---------|------|---------|------------------------------------------|
| Post-graduate | 1 <sup>st</sup> Class | Physics | 1989 | 69.4%   | Annamalai University, Tamil Nadu         |
| MPhil/MTech   |                       | Physics | 1990 | Awarded | Annamalai University, Tamil Nadu.        |
| Ph.D.         |                       | Physics | 2007 | Awarded | Vinoba Bhave University (VBU), Hazaribag |

7. Title of the Ph.D. Thesis: **THE VARIATION IN BONDING AND ELASTIC PROPERTIES OF SOME III-V COMPOUND SEMICONDUCTORS AND I-VII COMPOUNDS BY ATOMIC SUBSTITUTION**
8. Specialization at the Master's level: **Advanced Electronics.**
9. Specialization at the Doctorate level: **Solid State Physics**
10. Research experience: **25 years**
- Place of research: **Vinoba Bhave University (VBU), Hazaribag**
11. No. of PhD Students currently enrolled: **01**

### **Publications:**

1. Umamageswari, et al. (2026). "Carbon Nanotube-Assisted NiO–ZnO Heterojunction Counter Electrodes for Enhanced Photovoltaic Performance in Pt-Free Dye-Sensitized Solar Cells." *Journal of Electronic Materials* (Springer). DOI: 10.1007/s11664-026-12971-2.
2. Umamageswari, et al. (2026). "Structural, Vibrational, and Electronic Properties of ZnS Nanoclusters: A DFT study." *International Journal of Scientific Research and Engineering Development*, 9(2), ISSN : 2581-7175
3. Umamageswari, et al. (2024). "DFT and Spectroscopic Studies of Allantoin - A Multifunctional Bioactive Compound." *International Journal of Science and Research (IJSR)*, ISSN: 2319-7064. (Impact Factor: 7.101).
4. Umamageswari (2016). "Effects of Mobile Tower Radiation on Public Health." *International Journal for Exchange of Knowledge (IJEK)*, 3(1): 69-77, ISSN:2394-1669 (online)
5. Umamageswari (2012). "Electronic Pollution - A Possible Threat to World's Biodiversity." *Emerging Science*, 4(9), ISSN: 0976-4100
6. Umamageswari and P Mahto (2009). " Lattice Distortion in some III-V semiconductors " Conference Proceedings of Recent Trends in Emerging Frontiers of Physical Sciences (RTEFPS–2009)  
Jointly organised by Sindri College, BIT Sindri; sponsored by UGC-ERO and VBU Hazaribagh (02-03 November 2009).

### **Books Published**

Umamageswari and M Sivakumar. *Digital Systems & Applications*, Vishal Publishing Company, Jalandhar, Delhi (2022), ISBN : 978-93-91247-60-7

### **Technical Workshops Attended**

1. **Practical Training on Luminescence Measurement Techniques and Nanoparticle Synthesis for Sensing and Imaging** (Dec 15-16, 2025) | ANRF-sponsored workshop, IIT (ISM) Dhanbad.

2. **Wide Bandgap Semiconductors for Power Electronics** (Nov,2025) | ANRF-sponsored workshop, *IIT (ISM) Dhanbad*.
3. **Capacity Building Workshop for College Principals** (21-23 March 2024) | *Department of Higher Education, Govt. of Jharkhand, Ranchi*
4. One day workshop on **Reflections on the role of teachers in education** in the present times" organised jointly by VBU and Bokaro Steel City college on 16<sup>th</sup> May 2015.

### **Paper presentation in Seminars/Conferences:**

1. **"Application of II-VI semiconductors: A Conceptual Review "***"National Conference on Recent Developments in Mathematics and Allied Science with Applications in Agriculture and Technology (Online), organised by Faculty of Mathematics, SVPUAT, Meerut (22-23 December 2025).*
2. **"Estimation of Bandgap in some III-V semiconductor compounds and their solid solutions "** National Conference on Material Science for Energy Harvesting (MSEH-2015) Sponsored by BRNS, SERB, CSIR, and MoES; organised by Dept. of Physics, Jubilee College, Bhurkunda (08-09 January 2015).
3. **" Bandgap in some III-V pure and substituted semiconductors "** **CMDAYS-2012 : National Conference on Condensed Matter Physics** Organised by B.I.T. Mesra, Ranchi (29-31 August 2012).
4. **"Lattice Distortion in some III-V semiconductors"** **National Seminar on Recent Trends in Emerging Frontiers of Physical Sciences (RTEFPS-2009)** Jointly organised by Sindri College, BIT Sindri; sponsored by UGC-ERO and VBU Hazaribagh (02-03 November 2009).
5. **"Effects of Mobile Tower Radiation on Public Health" National Seminar on " Effects of Mobile Tower Radiation on Plant, Human and other animals "** sponsored by VBU, Hazaribagh and organised by Chas College, Chas(23-24 April,2016).
6. **"Electronic Pollution- a possible Threat to World's Biodiversity "** **UGC sponsored National Seminar on " Biodiversity: Its conservation and sustainable development for Human welfare "** organised by University Department Of Zoology in collaboration with Zoological society of India, Bodh Gaya, Bihar. (7-9th April ,2012).
7. Attended National Seminar on **" The use of technical terminology, problems and solutions "** organised by the commission for Scientific and technical terminology, ministry of human resource development, Department of Higher education, New delhi at Bokaro Steel City College in (28<sup>th</sup>-29<sup>th</sup>, August, 2008).
8. **Acted as Chairperson in the technical session of Multidisciplinary seminar SYNERBIO-2026, 11-12 May 2026 on " Synergy of Biological innovations for Green entrepreneurship and sustainable livelihoods"** organised by BBMKU, Dhanbad sponsored by Jharkhand state Higher education council (JSHEC), Ranchi.

### **Life membership**

Life member of INDIAN SCIENCE CONGRESS ASSOCIATION (L15602).