Department of Physics
Faculty of Science / University of Peradeniya

Prof. T. M. W. J. Bandara

B.Sc. (Ruhuna.), M.Phil. (Perad.), Ph.D. (Perad.)

Professor in Physics

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Higher Education Qualifications

PhD

University of Peradadeniya
Sri Lanka
(2010)

MPhil

University of Ruhuna
Sri Lanka
(2001)

BSc

University of Ruhuna
Sri Lanka
(1996)

Awards, Scholarships, Memberships & Fellowships

- NRC Merit Award for Scientific Research Award for Year 2017
- Presidential Research Awards 2016 for scientific publications
- Presidential Research Awards 2015 for scientific publications
- Presidential Research Awards 2014 for scientific publications
- Presidential Research Awards 2013 for scientific publications
- Presidential Research Awards 2012 for scientific publications
- NRC Merit Award for Scientific Publication 2011
- Presidential Research Awards 2010 for scientific publications
- Presidential Research Awards 2009 for scientific publications
- Presidential Research Awards 2001 for scientific publications

Positions Held

- Senior lecturer, Department of Physics, Faculty of Science, Rajarata University of Sri Lanka - (2010 to 2017)
- Probationary lecturer, Department of Physics, Faculty of Science, Rajarata University of Sri Lanka- (2003 to 2010)

My Teachings

- AS402: Research Methodology & Scientific Writing – 3 credits
- AS461: Semiconductor Device Technology and Application
- ES313: Energy Weather and Environment
- PH262: Energy Weather and Environment
- PH374: Experimental Techniques and Material Characterization
- PH516: Materials Characterization Techniques

Research Interests (Research Fields/ Projects)

Sustainable energy, Photo-electrochemical solar cells, Electro-physics, Dielectric analysis, Chemical Physics, Graphene, and Graphene quantum dots, Supercapacitors.

Ongoing Research and Projects

- **Counter ion effects on electrolytes in dye sensitized solar cells**
- **Enhancement of Light harvesting efficiency of photo-electrodes in solar cells**
- **Bio polymer, Agar based, gel polymer electrolyte for electrochemical power sources**
- **EXFOLIATION OF GRAPHITE INTO GRAPHENE**
- **PREPARATION OF LOW COST AND HIGHLY EFFICIENT SUPER CAPACITORS**

Key Publications

Physical Chemistry Chemical Physics - (2012)

Efficiency enhancement in dye sensitized solar cells using gel polymer electrolytes based on a tetrahexylammonium iodide and MgI 2 binary iodide system.

Solar energy materials and solar cells - (2001)

H2 evolution from a photoelectrochemical cell with n-Cu2O photoelectrode under visible light irradiation

Conferences

Solar Asia 2018 Int. Conf.

HELD AT : National Institute of Fundamental Studies - (2018)
TOPIC : *Quasi Solid State Quantum Dot-Sensitized Solar Cells*

Solar Asia 2018 Int. Conf.

HELD AT : National Institute of Fundamental Studies - (2018)
TOPIC : *Mixed Cation Effect in Gel Polymer Electrolytes Intended for Solar Cells*

Solar Asia 2018 Int. Conf.

HELD AT : National Institute of Fundamental Studies - (2018)
TOPIC : *FTIR Analysis of Ethylene Carbonate Electrolytes for Batteries and Dye Sensitized Solar Cells*

Solar Asia 2018 Int. Conf.

HELD AT : National Institute of Fundamental Studies - (2018)
TOPIC : *Measurement Scan Rate Dependence of Photo-Electrochemical Solar Cell Performance*

15th International Conference on Frontiers of Polymers and Advanced Materials (ICFPAM 2019)

HELD AT : Penang, Malaysia. - (17 - 21 June 2019,)
TOPIC : *Density, Mobility and Diffusion Coefficient of Charge Carriers in Polymer Electrolytes Using Complex Impedance Analysis*

My Publications

Please goto the website.

https://sci.pdn.ac.lk/physics/staff/Wijendra-Bandara