



Contact Details: Department of Physics and Astronomical Science
School of Physical & Material Sciences
TAB, Central University of Himanchal Pradesh (CUHP)
Shahpur, District-Kangra, HP-176206, India

Academic Qualification: Ph.D. (Banaras Hindu University)

Positions Held: Assistant Professor – Central University of Himanchal Pradesh (CUHP), HP
UGC-Dr. D.S. Kothari Post Doctoral Fellow, IIT (BHU) [Feb 2012 – Feb 2015]

Specialisation: Condensed Matter Physics, Nano Materials

Research Interests:

- **Exotic materials:** Nano-particles, Metal and metal oxide decorated Carbon nanostructures (CNT, CNF and Graphene), Solid Oxide Fuel cell, Super capacitor, Lithium Ion Batteries.
- **Materials for Energy storage:** Synthesis, growth and characterization of materials (metal hydrides, complex hydrides, high surface area materials, metal oxides- CNS composites)

Publications:

35 International Papers, 2 Review articles, 1 Book Chapter, H-index-12

2 review articles and 10 Major publications

- 1 Graphene oxide: strategies for synthesis, reduction and frontier applications
Rajesh Kumar Singh, Rajesh Kumar and Dinesh Pratap Singh
RSC Advances, 6 (2016) 64993-65011 **Impact Factor- 3.29**
- 2 Natural and waste hydrocarbon precursors for the synthesis of carbon based nanomaterials: graphene & CNTs.
Rajesh Kumar, **Rajesh Kumar Singh**, Dinesh P Singh
Renewable & Sustainable Energy Reviews 58 (2016) 976-1006 **Impact Factor- 6.798**
- 3 Growth analysis and high-yield synthesis of aligned-stacked branched nitrogen-doped carbon nanotubes using sesame oil as natural botanical hydrocarbon precursor.
Rajesh Kumar, **Rajesh Kumar Singh** and R. S. Tiwari
Materials and Design 94 (2016) 166-175 **Impact Factor- 3.997**
- 4 Self-assembled hierarchical formation of conjugated 3d cobalt oxide nanobeads-cnts-graphene nanostructure using microwave for high performance supercapacitor electrode.
Rajesh Kumar, **Rajesh Kumar Singh**, P.K. Dubey, D. P. Singh and R M Yadav
ACS Applied Materials & Interfaces 7 (2015) 15042–15051, **Impact Factor- 7.145**
- 5 Freestanding 3D graphene nickel encapsulated nitrogen-rich aligned carbon nanotubes for high-performance supercapacitors having robust cycle stability.
Rajesh Kumar, **Rajesh Kumar Singh**, P.K. Dubey and D. P. Singh
Advanced Materials Interfaces (2015) 1500191 (1-13) **Impact Factor- 3.365**
- 6 Microwave-assisted synthesis and deposition of a thin ZnO layer on microwave-exfoliated graphene: optical and electrochemical evaluations
Rajesh Kumar, **Rajesh Kumar Singh**, Alfredo R. Vaz, Stanislav A. Moshkalev
RSC Advances 5 (2015) 67988–67995, **Impact Factor- 3.29**
- 7 Electrical conductivity of barium substituted LSGM electrolyte materials for IT-SOFC
Raghvendra, **Rajesh Kumar Singh** and Prabhakar Singh
Solid State Ionics 262 (2014) 428-432, **Impact Factor- 2.38**
- 8 Catalytic effect of different sizes of CeO₂ nano particles on decomposition and hydrogen sorption kinetics of magnesium hydride

- Rajesh Kumar Singh**, T. Sadhasivam, G. I. Sheeja, P Singh and O. N. Srivastava,
Int. Journal of Hydrogen Energy 38 (2013) 6221-6225 **Impact Factor-3.205**
- 9 Structural characterization, electrical and dielectric relaxations in Dy-doped Zirconia
 Raghvendra, Prabhakar Singh and **Rajesh Kumar Singh**
Journal of Alloys and Compounds 549 (2013) 238-244, **Impact Factor-3.014**
- 10 Synthesis, Characterization and Optical Properties of graphene sheets-ZnO multipod nanocomposites
 Rajesh Kumar, **Rajesh Kumar Singh**, Jai Singh, R S Tiwari and O N Srivastava
Journal of Alloys and Compounds 526 (2012) 129-134, **Impact Factor-3.014**
- 11 Effect of admixing different carbon structural variants on the decomposition and hydrogen sorption kinetics of
 magnesium hydride.
Rajesh Kumar Singh, Himanshu Raghubanshi, Sunil Kumar Pandey, O.N. Srivastava
Int. Journal of Hydrogen Energy 35 (2010) 4131-4137, **Impact Factor-3.205**
- 12 Thermodynamical, Structural, Hydrogen storage properties and simulation studies of P-C Isotherms of (La,
 Mm) Ni_{5-y}Fe_y
Rajesh Kumar Singh, M.V. Lototsky and O.N. Srivastava
Int. Journal of Hydrogen Energy 32 (2007) 2971-2976, **Impact Factor-3.205**

MPhil/PhD Supervised/Supervising: **Ph.D. Supervising : One**

Participation in Seminars/Conferences: 20 International and National Conferences

Membership of Learned Societies/ Professional Bodies:

Indian Physics Association (Life Member) (**VAR/LM/13102**)

Member of International Association of Hydrogen Energy

Affiliate member of Royal Society of Chemists (Annual member)

Awards & Honours Received:

- Israel Council for Higher Education PBC Fellowships for Outstanding Post-doctoral Researchers from China and India - 2016/2017—2019/2020
- UGC-Dr. D.S. Kothari Post Doctoral Fellowship, New Delhi [2012- 2015]
- Senior Research Fellowship, CSIR, New Delhi.
- Gold Medal [1st Rank in B.Sc.]

Others:

- Diploma in System Management (DISM), APTECH Comp. Edn.(One Year) Nov.,2001- Feb., 2003.
- Short training course on “Computer Applications in Ph. D. Research and Bioinformatics” 20 Jul - 13 Aug., 2003.
- Reviewer of International Journal of Hydrogen Energy (3.31), Journal of Alloys and Compounds (3.0), Journal of Materials Chemistry A (7.44), Applied Surface Science(2.71), ACS Applied Materials and Interfaces (6.72)
- **Instruments Handled / Acquaintance**
- Radio Frequency Induction and Spin Melting (12,18 KW), Different tube & box type programmable furnaces (for synthesis and annealing), Coating of different types of material by flash evaporation, High Energy Attritor and Planetary Ball Mill (Szegvari Model 01 HD, Retsch PM-400), X-Ray Powder Diffractometer (XRD Philips PW1710, X’Pert Pro PANalytical, Rigaku Miniflex), Scanning Electron Microscopy (SEM, Philips XL 20, FEI Quanta 200), Transmission Electron Microscopy (Philips CM-12, Technai 20G²), Vacuum Coating / Instrumentation (Hind Hivac, Edwards, Vico), Fourier Transform Infrared Spectroscopy (FTIR) (Perkin Elmer, Spectrum 100, USA), UV visible (Perkin Elmer), Hydrogenation / Dehydrogenation Apparatus Advanced Material Corporation(AMC), Wayne Kerr (6500 P Series) LCR meter -frequency range 20 Hz to 1 MHz,in High temp. range from RT to 900 °C