**Personal Profile**

|  |  |  |  |
| --- | --- | --- | --- |
| G:\1. Laptop desktop work\Jyoti all acadmeics information\Photos-Jyoti\IMG-20190706-WA0000.jpg |  | **Dr. Jyoti Jaiswal** | |
| **Assistant Professor, Department of Physics** | |
| **Rajiv Gandhi University, Rono Hills, Doimukh** | |
| **Arunachal Pradesh-791112** | |
|  | |
| **Email:** | [**jyoti.jaiswal@rgu.ac.in**](mailto:jyoti.jaiswal@rgu.ac.in) |
|  | [**jaiswaljyoti1988@gmail.com**](mailto:jaiswaljyoti1988@gmail.com) |
|  |  |
| **Phone No.:** | **+91 95572 88460; +91 87912 30231** |

**Educational Profile**

|  |  |
| --- | --- |
| Ph.D. | Indian Institute of Technology Roorkee (IITR), Haridwar, Uttarakhand; 2019  Supervisor: Prof. Ramesh Chandra |
| M.Phil. | NA |
| M.Tech. | Indian Institute of Technology Delhi (IITD), New Delhi, Delhi; 2013  Subject: Optoelectronics and Optical Communications  Specialization: Optoelectronics and Optical Communications |
| M.Sc. | Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, Uttar Pradesh; 2010  Subject: Physics  Specialization: Electronics |
| B.Sc. | Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, Uttar Pradesh; 2008  Subject: Physics, Mathematics, Chemistry |

**Professional Experience**

|  |  |
| --- | --- |
| **Assistant Professor**, Department of Physics,  Rajiv Gandhi University, Arunachal Pradesh, India | April, 2021-till date |
| Lady Davis Post-doctoral Fellow, Racah Institute of Physics  The Hebrew University of Jerusalem, Jerusalem, Israel  Supervisor: Prof. Amir Sa’ar | September, 2020- April 2021 |
| CSIR Research Associate Post-doctoral Fellow, Institute Instrumentation Centre  Indian Institute of Technology Roorkee (IITR), Haridwar, Uttarakhand, India  Supervisor: Prof. Ramesh Chandra | June, 2019- August 2020 |
| Project Research Associate Post-doctoral Fellow, Institute Instrumentation Centre  Indian Institute of Technology Roorkee (IITR), Haridwar, Uttarakhand, India  Supervisor: Prof. Ramesh Chandra | Feb, 2019- May 2019 |

**Administrative Experience**

|  |  |
| --- | --- |
| **NAAC Committee, Rajiv Gandhi University** | July, 2021- Till date |

**Awards & Honours**

1. Award of the FY2021-22 JSPS International Postdoctoral Fellowship for 24 months (2021-2023) for research in Japan.
2. Award of a Lady Davis Postdoctoral Fellowship (Emily Erskine Endowment Fund) for 12 months (2019-2020) for research in Hebrew University of Jerusalem, Israel.
3. Award of International Travel Support (June 2019) for International Conference in Sweden from DST-SERB India. (Not availed)
4. Award of Research Associateship (Mar 2019) from Council of Scientific & Industrial Research (CSIR), India.
5. Award of Institute Post-Doctoral fellowship (Feb 2019) from Indian Institute of Technology (IIT) Guwahati, India. (Not availed).
6. Award of Senior Research Fellowship (SRF) from MHRD, India from July 2013 to July 2018.
7. Award of Fellowship as a Teaching Assistant from MHRD, India from July 2011 to June 2013.
8. Qualified the Graduate Aptitude Test in Engineering (GATE-2011) in PHYSICS with AIR-473.
9. Editor of Journal of Nanomedicine, Nanotechnology and Nanomaterials.
10. Reviewer of Sensors and Actuators A: Physical, Elsevier since July 2021 to date.
11. Reviewer of Sensors and Actuators A: Physical, Elsevier since July 2021 to date.
12. Reviewer of Vacuum, Elsevier since Jan 2021 to date.
13. Reviewer of Journal of the Institution of Engineers (India): Series C (IEIC), Springer since Aug 2020 to date.
14. Reviewer of Optical Society of America (OSA) Journals such as Applied Optics, Optics Letters, Optics Express, Optical Materials express, Journal of the Optical Society of America A, since Feb 2020 to date.

**Membership of Professional Bodies**

1. Member of Israel Physical Society (IPS), Israel (Feb 2021 to date).
2. Member of Optical Society of America (OSA), USA (Feb 2020 to date).
3. Member of SelectScience, UK (Since June 2021 to date).

**Research Interests**

My research interests lie in developing novel nanostructured thin films of various materials such as 2D materials (TMDs), Oxides, Metals, Carbides, Nitrides, Semiconductors, etc. by PVD techniques and green chemical approach, Porous Silicon by electrochemical anodization, and Perovskite material by spin coating in evolving a range of Gas and Bio/Chemical Sensing, Supercapacitor, Photovoltaic, and Energy-Harvesting Devices. I explore their fundamental properties like microstructural, compositional, surface, optical, electronic and electrochemical using a range of characterizing tools (XRD, FESEM, TEM, OM, AFM, EDX, XPS, UPS, VASE, RIFTS, UV-Vis-NIR spectroscopy, PL, TRPL, PPMS, Semiconductor parameter analyzer, Contact angle goniometry, electrochemical work station) and application setups.

**Research Publications**

1. Optical and electrical tunability in vertically aligned MoS2 thin films prepared by DC sputtering: Role of layer number: Tiwari\*, P.; **Jaiswal\*, J**.; Chandra, R.; *Vacuum.,* (Just accepted).
2. Controlled growth of multiphasic zinc tungstate hierarchal nanostructures for improved electrochemical energy storage: Tiwari\*, P.; Katoch, A.; **Jaiswal\*, J**.; Pal, S.; Prakash, R.; Chandra, R.; *J. Electrochem. Soc.,* (Just accepted).
3. Pd functionalized SnO2 thin films deposited by reactive magnetron sputtering at room temperature for the fabrication of highly sensitive CO gas sensor: Gangwar, A.K.; Srivastava, S.; Godiwal, R.; **Jaiswal, J.**; Vashishtha, P.; Pal, P.; Gupta, G.; Singh, P.; *J. Alloys Compd.,* (Just accepted).
4. Newly**emerging 2D TMDC van der Waals heterostructure for solar cells: Jaiswal\*, J**.; [*Journal of Nanomedicine Nanotechnology and Nanomaterials*](http://researchconnect.press/journals/nanomedicine-nanotechnology-nanomaterials/)., **2021**, 2.
5. Low-temperature highly selective and sensitive NO2 gas sensors using CdTe-functionalized ZnO filled porous Si hybrid hierarchical nanostructured thin films, **Jaiswal, J.**; Singh, P.; Chandra, R.; *Sens. and Actuators B: Chem.* **2021**, 327, 128862.
6. Influence of magnetron configurations on the structure and properties of room temperature sputtered ZnO thin films: Godiwal, R.; Gangwar, A.K.; **Jaiswal, J.**; Vashishtha, P.; Hossain, M.; Pal P.; Gupta, G.; Singh, P.; *Phys. Scr.*, **2021**,96, 015811.
7. Fabrication of highly responsive room temperature H2 sensor based on vertically aligned edge-oriented MoS2 nanostructured thin film functionalized by Pd nanoparticles: **Jaiswal, J.**; Tiwari, P.; Singh, P.; Chandra, R.; *Sens. and Actuators B: Chem.* **2020**, 325, 128800.
8. MoS2 hybrid heterostructure thin film decorated with CdTe quantum dots for room temperature NO2 gas sensor: **Jaiswal, J.**; Sanger, A.; Tiwari, P.; Chandra, R.; *Sens. and Actuators B: Chem.* **2020**, 305, 127437.
9. Tunable Plasmonic Properties of Silver Nanoparticles Embedded in Amorphous-Carbon Ultrathin Films Deposited by Co-Sputtering**: Jaiswal, J.**; Tiwari, P.; Chandra, R.; *AIP Conf. Proc.*, **2020**, 2220, 050006.
10. Magnetron configuration dependent surface properties of SnO2 films deposited by sputtering process: Gangwar, A.K.; Godiwal, R.; **Jaiswal, J.**; Baloria, V.; Pal, P.; Gupta, G.; Singh, P.; *Vacuum.*, **2020**, 177, 109353.
11. In situ Fabrication of Tugnsten Disulfide on Copper Foam for Application as Electrodes in Supercapacitors by Reactive Sputtering Technique: Tiwari, P.; **Jaiswal, J.**; Chandra, R.; *AIP Conf. Proc.*, **2020**, 2220, 090007.
12. Ellipsometric investigation of room temperature grown highly-oriented anatase TiO2 thin films: **Jaiswal, J.**; Mourya, S.; Malik, G.; Chandra, R.; *J. Electron. Mater.*, **2019**, 48, 1223-1234.
13. Optical and electrical properties of highly ordered α-, γ- and α+ γ- MnS thin films deposited by DC reactive sputtering: Tiwari, P.; **Jaiswal, J.**; Chandra, R.; *J. Appl. Phys.,* **2019**, 126, 213108.
14. Hierarchal Growth of MoS2@CNT Heterostructure for all Solid State Symmetric Supercapacitor: Insights into the Surface Science and Storage Mechanism: Tiwari, P.; **Jaiswal, J.**; Chandra, R.; *Electrochim. Acta,* **2019**, 324, 134767.
15. Development of Pd-Pt functionalized high performance H2 gas sensor based on silicon carbide coated porous silicon for extreme environment applications: Mourya, S.; Arvind Kumar, **Jaiswal, J.**; Malik, G.; Kumar, B.; Chandra, R.; *Sens. and Actuators B: Chem.*, **2019**, 283, 373-383.
16. Effect of annealing parameters on optoelectronic properties of highly ordered ZnO thin films: Malik, G.; Mourya, S.; **Jaiswal, J.**; Chandra, R.; *Mater. Sci. Semicond. Process.*, **2019**, 100, 200-213.
17. Understanding the mechanism of adsorption of CTAB and polylysine on silver nanoparticles and detection of Hg2+: Experimental and DFT study: Moudgil, L.; **Jaiswal, J.**; Mittal, A.; Saini, G.S.S.; Singh, G.; Kaura, A.; *J. Mol. Liq.*, **2019**,276, 910-918.
18. Tunable optical properties of plasmonic Au/Al2O3 nanocomposite thin films analyzed by spectroscopic ellipsometry accounting surface characteristics: **Jaiswal, J.**; Mourya, S.; Malik, G.; Chandra, R.; *J. Opt. Soc. Am. A,* **2018**,35, 740-747.
19. Hydrogenation and dehydrogenation of hydrophobic Pd-capped vertically aligned Ti nanoflake thin film**: Jaiswal, J.**; Mourya, S.; Malik, G.; Chandra, R.; *JOM*, **2018**,70, 2179-2184.
20. Structural and optical characteristics of in-situ sputtered highly oriented 15R-SiC thin films on different substrates: Mourya, S.; **Jaiswal, J.**; Malik, G.; Kumar, B.; Chandra, R.; *J. Appl. Phys.,* **2018**,123, 023109.
21. The role of the substrate on photophysical properties of highly ordered 15R-SiC thin films: Mourya, S.; **Jaiswal, J.**; Malik, G.; Kumar, B.; Chandra, R.; *J. Electron. Mater.,* **2018**,47, 5259-5268.
22. Enhanced Optical Absorption of Ti Thin Film: Coupled Effect of Deposition and Post-deposition Temperatures: **Jaiswal, J.**; Mourya, S.; Malik, G.; Chauhan, S.; Daipuriya, R.; Singh, M.; Chandra, R.; *JOM*, **2017**,69, 2383-2389.
23. Optical and other physical properties of hydrophobic ZnO thin films prepared by dc magnetron sputtering at room temperature: Malik, G.; **Jaiswal, J.**; Mourya, S.; Chandra, R.; *J. Appl. Phys.,* **2017**,122, 143105.
24. Determination of optical constants including surface characteristics of optically thick nanostructured Ti films: Analyzed by Spectroscopic ellipsometry: **Jaiswal, J.**; Mourya, S.; Malik, G.; Chauhan, S.; Sanger, A.; Daipuriya, R.; Singh, M.; Chandra, R.; *Appl. Opt.*, **2016**,55, 8368-8375.
25. Enhanced optical absorbance of hydrophobic Ti thin film: Role of surface roughness: **Jaiswal, J.**; Sanger, A.; Kumar, A.; Mourya, S.; Chauhan, S.; Daipuriya, R.; Singh, M.; Chandra, R.; *Adv. Mater. Lett.*, **2016**,7, 485-490.
26. A fast response/recovery of hydrophobic Pd/V2O5 thin films for hydrogen gas sensing: Sanger, A.; Kumar, A.; Kumar, A.; **Jaiswal, J.**; Chandra, R.; *Sens. and Actuators B: Chem.*, **2016**,236, 16-26.
27. Influence of sputtering parameters on structural, optical and thermal properties of copper nanoparticles synthesized by dc magnetron sputtering: **Jaiswal, J.**; Chauhan, S.; Chandra, R.; *Int. J. Technol. Manag.*, **2015**,04, 678-688.

**Patent**

Nil

**Book/Book Chapter published**

Nil

**Research guidance**

**Post-doc fellow**

Nil

**Ph.D scholar**

1. Itum Ruti

Topic of research: Investigation of Graphene Based Materials for Energy Storage Devices

Year of PhD degree: Ongoing

**Master students (M.Sc. Physics)**

Completed: 0

Ongoing: 4

**Course/Conference/Workshop organized**

1. One day International Webinar on “Emerging Trends in Biomedical Applications of Nanostructured Materials” on July 14, 2021 by Department of Physics, Rajiv Gandhi University, Arunachal Pradesh, India.

Duration: 14 July-14 July, 2021.

Role: Convener and Coordinator.

**Course/Conference/Workshop etc. attended**

1. Presented a poster in ‘IVS-IPSTA 2021 - 39th Annual Conference’, held Online by Israel Vacuum Society (IVS) *&* Israel Plasma Science and Technology Association, Israel, on 17 November 2021.

Title of the presentation: CdTe-functionalized ZnO filled porous Si hybrid hierarchical nanostructured thin films for low-temperature operable highly selective/sensitive NO2 sensors

1. Delivered an oral presentation in ‘IVS Student Conference 2021’, held Online by Israel Vacuum Society (IVS), Israel on 15 July 2021.

Title of the presentation: Growth of Vertically Aligned Nanocrystalline MoS2 Thin Films by DC Sputtering: Microstructural, Optical and Electrical  
Properties

1. Delivered an oral presentation in ‘5th International Conference on Emerging Electronics (IEEE-ICEE 2020)’, held at Indian Institute of Technology Delhi, New Delhi, India during 26 November-28 November, 2020.

Title of the presentation: Vertically aligned edge-oriented MoS2 hybrid thin films decorated with Pd nanoparticles for room temperature hydrogen sensor

1. Presented a poster in ‘7th International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME 2019)’, held at Indian Institute of Technology Ropar, Punjab, India during 5 December-7 December, 2019.

Title of the presentation: Development of CdTe functionalized multilayer MoS2 hybrid nano-heterostructure thin film for excellent room temperature NO2 gas sensor

1. Presented a poster in ‘3rd International Conference on Condensed Matter & Applied Physics (ICC-2019)’, held at Bikaner, Govt. Engineering College, Bikaner, Rajasthan, India during 14 October -15 October, 2019.

Title of the presentation/talk: Tunable Plasmonic Properties of Silver Nanoparticles Embedded in Amorphous-Carbon Ultrathin Films Deposited by Co-Sputtering

1. Delivered an invited talk in ‘OSA Student Chapter’ held at Department of Physics, Indian Institute of Technology Kanpur, Kanpur, India on 01 February 2019.

Title of the talk: Development of nanostructured thin films for laser detonator, optoelectronic and gas sensing applications

1. Presented a poster in ‘20th International Conference on Sensor Science and Technology (ICSST-2018)’, held Online at Dubai, UAE, during 19 November-20 November 2018.

Title of the presentation: A fast chemiresistive H2 gas sensor based on sputter grown nanocrystalline P-TiO2 thin film decorated with catalytic Pd-Pt layer on P-Si substrate

1. Presented a poster in ‘XXXIX Conference of Optical Society of India International Conference on Optics and Photonics (ICOP 2015)’, held at Department of Applied Optics and Photonics, University of Calcutta, India during 20 February-22 February 2015.

Title of the presentation: Effect of target-substrate angle on the optical properties of sputtered titanium thin films

1. Presented a poster in ‘International Conference on Science, Technology and Management (ICSTM-2015)’, held at YMCA, Connaught Place, New Delhi, India on 01 February 2015.

Title of the presentation: Influence of sputtering parameters on structural, optical and thermal properties of copper nanoparticles synthesized by dc magnetron sputtering

**Sponsored Project**

|  |  |  |  |
| --- | --- | --- | --- |
| Title of the project | Funding agency | Year of sanction | Role |
|  |  | **20xx** | **PI/Co-PI** |
|  |  |  |  |