



UGC-Human Resource Development Centre

यूजीसी-मानव संसाधन विकास केंद्र

Jawaharlal Nehru University, New Delhi

जवाहरलाल नेहरू विश्वविद्यालय, नई दिल्ली



ज्ञान-विज्ञान विमुक्तये

Website: <https://www.jnu.ac.in/hrdc>

## 20<sup>th</sup> Refresher Course in Physical Sciences & Nano Sciences (ONLINE MODE)

11<sup>th</sup> July – 23<sup>rd</sup> July 2022

### Course coordinators:

**Prof. Ram Sagar Mishra**, School of Physical Sciences, JNU

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**Dr. Partima Solanki**, Special Centre for Nano Sciences, JNU

Email: [partima@mail.jnu.ac.in](mailto:partima@mail.jnu.ac.in)

### List of Participants:

Sl. No	NAME	Sl. No	NAME
1	A. K. M. Maidul Islam	24	Ravinder Kumar
2	Abha.K	25	Ravindra Bhagwani Lahire
3	Abullais Nehal Ahmed	26	Ravindra Kumar
4	Amrendra Narayan	27	Rozy Hooda
5	Arvind Kumar	28	Sandip Mahajan
6	Ashim Kumar Pramanik	29	Satyendra Prakash Pal
7	Devendra Pratap Singh	30	Shashi Kant Kumar
8	Grima Dhingra	31	Shivaji Devrao Waghmare
9	Hemam Dinesh Singh	32	Shubhra Kala
10	Ishwar Dayal Sharma	33	Smita Samanta
11	Jayeeta Lahiri	34	Somnath Naskar
12	Jitendra Kumar Vats	35	Subhash Khatarkar
13	Jyoti Arahunasi	36	Sumalay Roy
14	Kailash Rambhau Nemade	37	Sunil Kumar
15	Kumar E	38	Suresh Kumar
16	Namdeo Ramdin Pawar	39	Swati
17	Nazia Tarannum	40	Tarwal Nilappa Laxman
18	Nilima Gogoi	41	Upkar Kumar Verma
19	Pijus Kumar Sasmal	42	Vibha Chopra
20	Poppy Hazarika	43	Vijay Ahlawat
21	Pragati Kumar	44	Vikram Sen
22	Rabindra Nath Mahato	45	Zokapsang Lungtau
23	Rajiv		

## Schedule

### Week – 1

DATE	10.00 am to 12.00 am	12.00 pm – 01:00 pm	1:00 pm – 2:00 pm		2:30 pm - 03.30 pm	03.30 pm - 03.45 pm	03.45 pm - 05.15 pm
Monday, July 11, 2022	Registration	Lunch Break	Combined Inaugural Session		Interaction with the Course Coordinators	Tea Break	<b>Prof. Avinash Chandra Pandey</b> <i>“Facilitating experiments with ion beams”</i>
DATE	09.30 am - 11.00 am	11.00 am – 11.30 am	11:30 am-01.00 pm	1.00 pm- 2.00 m	2.00 pm - 3.30pm	3.30 pm – 3.45 pm	3:45 pm-5:15 pm
Tuesday, July 12, 2022	<b>Prof. Ravi Prakash Singh</b> <i>“New Endeavours in Asymmetric Vinylogous Reactions: Towards Functionally Rich Synthons”</i>		<b>Prof. Vinod K Tiwari</b> <i>“Synthetic Chemists and our Society”</i>	<i>Lunch Break</i>	<b>Prof. Akhilesh K. Verma</b> <i>“Harnessing the reactivity of Alkynes: Construction of small molecules of biological relevance”</i>		<b>Prof. Mritunjay D Pandey</b> <i>“Fluorescence Spectroscopy: Principle Theory and Application”</i>
Wednesday, July 13, 2022	<b>Prof. Amit Thakur</b> <i>“Frontiers of pericyclic Reactions: A Molecular Orbital Approach”</i>		<b>Prof. Neetu Singh</b> <i>“Engineering New Materials for Drug Delivery: A Chemist’s Perspective”</i>		<b>Prof. A. K. Bhagi</b> <i>“Mixed metal oxide nanoparticle as a potential catalyst”</i>		<b>Dr. Pradeep Srivastava</b> <i>“Nanotechnology: Small is beautiful”</i>
Thursday July 14, 2022	<b>Prof. Satish K Awasthi</b> <i>“Design and Synthesis of small Molecules Nanoparticles and Its applications”</i>		<b>Prof. Ashok K Sharma</b> <i>“The emerging role of epigenetics in human diseases and prospects for epigenetic therapy”</i>		<b>Dr. Sobhan Sen</b> <i>“Utility of Molecular Spectroscopy in Everyday Life”</i>		<b>Prof. Anil K. Mishra</b> <i>“Chemistry of overcoming the research stress connection: A practical approach”</i>
Friday, July 15, 2022	<b>Dr. Abhay Kumar Singh</b> <i>“Study of Space weather and its effects on near Earth Environment”</i>		<b>Dr Amit Kumar</b> <i>Crafting Designer Nanoreactors for Bioorthogonal Catalysis</i>		<b>Prof. Sanjay Kr Sharma</b> <i>“Science Technology Continuum”</i>		<b>Prof. Manish K. Kashyap</b> <i>Density Functional Theory Approach: A Powerful Tool for Material Modeling</i>
Saturday July 16, 2022	Project Work Research Design		Project Work Data tabulation & Analysis		Project Work Report Preparation		Project Work Presentation Preparation

Week – 2

DATE	09.30 am - 11.00 am	11.00 am – 11.30 am	11:30 am-01.00 pm	1.00 pm- 2.00 pm	2.00 pm - 3.30pm	3.30 pm – 3.45 pm	3:45 pm-5:15 pm
Monday, July 18, 2022	<i>Interaction with the Course Coordinators: feedback of the first week from Session In charge/ Participants</i>		<b>Prof. Kaushik Pal</b>  <i>“New Insights into Nanocomposite Materials: Advancement and Applications”</i>		<b>Dr. Govind Gupta</b>  <i>“Semiconductor Heterostucture based Detectors for Optical Communication”</i>		<b>Dr. P.C. Mondal</b>  <i>“Nanofabrication of molecular electronics devices”</i>
Tuesday, July 19, 2022	<b>Prof. Absar Ahmad</b> <i>“Biological synthesis of isotopic and anisotropic nanoparticles and their varied applications “</i>		<b>Prof. Bijoy Kumar Kunar</b>  <i>“Design, Fabrication and testing of Devices using magnetic Nano-structures “</i>		<b>Prof. Ranjana Aggarwal</b> <i>“Communicating Science to Society: An Integrative approach”</i>		<b>Dr. Anil Kumar</b>  <i>“ Intellectual Property Rights and their Relevance to Science and Society”</i>
Wednesday, July 20, 2022	<b>Dr. Sumit Kumar</b>  <i>“Exosome: A Journey from Garbage Bags to Life-Saving Case”</i>		<b>Dr. Inderjeet Rao</b>  <i>“Hybrid nanomaterials for externally activated biomedical applications”</i>		<b>Dr. Neeraj Dwivedi</b>  <i>“Ultrathin surface Protectors for next generation Technologies”</i>		<b>Prof. Chander Shaker</b>  <i>“New Design of digital holographic interferometric microscope for imaging of biological cells and bacteria “</i>
Thursday July 21, 2022	<b>Dr. Raju Khan</b> <i>“Emerging and Futuristic Nanomaterials for Biosensing Applications”</i>		<b>Dr. Balaji Birajdar</b> <i>“Transmission Electron Microscopy for characterization of material”</i>		<b>Dr. Nanda Gunawardhana</b> <i>“Metal oxide gas sensors for Chemical gas detection”</i>		<b>Prof. Eremin Sergei</b> <i>“Fluorescence Polarization ImmunoAssay (FPIA) for detection of food contaminants”</i>
Friday, July 22, 2022	Evaluation		Evaluation		Evaluation		Evaluation
Saturday July 23, 2022	Evaluation		Evaluation		Evaluation		Combined Valedictory Session  03.30 PM- 5:00 PM