

Report of Expert Lecture on "Liquid Crystalline Columnar Mesogens: Potential Materials for Modern Optoelectronic Applications" organized by Department of Physics on 13th March 2024

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**Department of Physics
Integral University, Lucknow, Uttar Pradesh, India****Report of Expert Lecture
on****Liquid Crystalline Columnar Mesogens: Potential Materials for Modern Optoelectronic Applications****Date: 13th March, 2024**

The Departmental Quality Assurance Cell (DQAC) of the Physics Department organized an Expert Lecture on "Liquid Crystalline Columnar Mesogens: Potential Materials for Modern Optoelectronic Applications." The lecture was held on March 13, 2024, at Hall – 1, Central Auditorium Building, in offline (face to face) mode. The resource person for expert lecture was Dr. Dharmendra Pratap Singh, who is working as the Associate Professor at the University of the Littoral Opale Coast (Université du Littoral Côte d'Opale (ULCO)), France.

The event commenced with a warm welcome extended by Ms. Warisha Fatima, an M.Sc. Physics student, who invited Ms. Muskan Khan to present a bouquet to Dr. Dharmendra Pratap Singh as a gesture of appreciation and warm hospitality. Following a brief introduction of Dr. Dharmendra Pratap Singh, Ms. Warisha invited him to begin his insightful talk.

Key Points Covered in the Guest Lecture:

Foundations of Liquid Crystals: Dr. Singh initiated the lecture by providing a comprehensive overview of liquid crystals, elucidating their unique properties and structures. He delved into the classification of liquid crystals, emphasizing their significance in modern optoelectronic applications.

Research Applications: The speaker discussed various research applications of liquid crystals, including their utilization in discotic, ferroelectric, and nematic phases. He highlighted the importance of understanding charge transport mechanisms and explored their potential applications in energy, sensing, thermoelectricity, optoelectronics, photovoltaics, and organic electronics.

Nanocomposites: Dr. Singh elaborated on the development of liquid crystal-nanocomposites, showcasing their potential for enhancing the performance and functionality of optoelectronic devices. He presented examples of recent advancements and ongoing research projects in this domain, underscoring the interdisciplinary nature of liquid crystal research.

The lecture was followed by an interactive session, during which the audience had the opportunity to engage with the speaker, asking questions and seeking clarifications. This interactive element enriched the learning experience and allowed for a deeper exploration of specific topics. During the interactive session, Dr. Dharmendra Pratap Singh generously shared insights and guidance regarding higher studies opportunities in France for interested students. Drawing from his own experiences, he provided valuable advice on navigating the application process and highlighted various fellowship opportunities available to aspiring researchers. Dr. Singh's career counselling session proved to be immensely beneficial for students seeking to pursue further studies abroad especially in France, inspiring them to explore and pursue their academic aspirations with confidence.

Dr. Dharmendra Pratap Singh concluded with a summary of key takeaways and actionable insights for the audience. He encouraged attendees to explore further research opportunities in the field of liquid crystals and to contribute to the advancement of optoelectronic technologies.

To conclude the event, Dr. Shamoon Ahmad Siddiqui, Head of the Department of Physics, delivered the Vote of Thanks. He extended heartfelt appreciation on behalf of the attendees to Dr. Dharmendra Pratap Singh for sharing his expertise and insights. Dr. Siddiqui also expressed gratitude to the Departmental Quality Assurance Cell (DQAC) for organizing such an informative lecture. In his closing remarks, he encouraged all students to continue exploring and innovating in their academic pursuits, fostering a spirit of curiosity and excellence.

This event was attended by 80 undergraduate and postgraduate students, along with 8 faculty members, showcasing the widespread interest and engagement in the topic of liquid crystals and optoelectronics.

Glimpses from the Expert Lecture:



With best regards

Prof. Shamoan Ahmad Siddiqui
Professor and Head
Department of Physics, Faculty of Science
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