HBNI Awards conferred to IPR Research Scholars

Dr. Vikas Rathore has been conferred the prestigious **J. B. Joshi Research Foundation Innovation Awards-2023** for his work "*Introducing a Breakthrough in Disinfection and Agriculture: Plasma Activated Water (PAW)*". His work sheds light on the transformative potential of Plasma Activated Water (PAW) in both disinfection and agriculture.

His innovative plasma device design unlocks the power of reactive oxygen and nitrogen species (RONS) to create PAW, a powerful weapon against pathogens. By meticulously fine-tuning PAW's properties through optimized parameters, he ensures its unmatched efficacy. Moreover, his ingenious setup allows for increased production, making PAW a viable solution for various applications.

The impact of research extends beyond disinfection. PAW demonstrates remarkable potential in agriculture, significantly boosting seed germination and plant growth – all without relying on harmful chemicals. This paves the way for a promising future that embraces sustainable practices in medicine, agriculture, food preservation, and more. His work marks a significant leap forward in sustainable technology, offering a glimpse into a chemical-free future.

HBNI Announcement

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Dr. Swarnima Singh has been conferred the prestigious **HBNI Outstanding Student Award 2023** for her work "*Experimental study of a quasi two-dimensional complex plasma*". Her work focuses on quasi-2D complex plasma systems, which serve as an ideal platform for particle-resolved studies of fundamental processes and collective behaviour.

The core aim of this research was to probe into the less explored domain of quasi two-dimensional complex plasmas, with a specific emphasis on unveiling and understanding phenomena such as structural phase transitions, the emergence of a triple point, dynamic structural rearrangement, and the initiation of self-sustained phase co-existence. These phenomena have remained elusive in the past due to technical and scientific challenges.

The innovative methodologies and profound insights garnered from her research underscore its significance and potential impact on advancing the theoretical and experimental comprehension of complex plasmas, with implications that stretch across disciplinary boundaries into materials science, condensed matter, non-equilibrium system, and beyond.

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