

ICTS MONTHLY COLLOQUIUM

Structural Chemistry of Boron: Inevitable Uncertainties

Chemistry lags behind physics: it took definite time for nucleosynthesis to churn out atoms. More recently, chemists ordered atoms into the periodic table of elements (Mendeleev, 1869) that reflects their properties, much before fundamental particles were discovered. One would imagine that the structures of these individual elements are by now well known. While this is true for most elements, there are some that defy understanding. The certainty with which the allotropes of the familiar element carbon, viz diamond, graphite, graphene, fullerene, and carbon nanotubes can be ascertained experimentally and theoretically, makes us feel that this should be true for the neighboring element boron as well. However, structures of boron 2D allotropes (borophenes), and 3D allotropes are not well understood. Recent attempts to “understand” the structural chemistry of boron will be presented here. (CURRENT SCIENCE, 95, 1277, 2008; 122, 161, 2022).



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Professor Eluvathingal Devassy Jemmis is an Year of Science Chair Professor of SERB in theoretical chemistry at the Indian Institute of Science (IISc), Bangalore, India. His primary area of research is applied theoretical chemistry with emphasis on structure, bonding and reactivity, across the periodic table of the elements. Spanning over wide areas such as polymorphs of elements and their compounds; organic and organometallic chemistry as well as structure and reactions, his research emphasizes on weaving threads between problems in different areas to uncover the underlying framework of chemistry. Professor E. D. Jemmis studied chemistry at IIT Kanpur, Princeton and Cornell, before joining the faculty of University of Hyderabad in 1980 and IISc, Bangalore in 2005. He was the founding director of Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM) between 2008-2013. Professor E. D. Jemmis's research has been acknowledged widely through various awards and recognition including the Shanti Swarup Bhatnagar prize (1994), TWAS prize (2003) and Padma Shri (2014).

3:30 PM, 17 April 2023

Zoom link: shorturl.at/dkyMN

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