

## **Colloquium**

### **A Sixth Sense for the Fifth Element: Graphite to Graphene and Borophenes to Borophites**

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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 sixth 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 fifth 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.

**References:**

Current Science, 95, 1277, 2008; 122, 161, 2022, Chem. Comm. 58, 9882, 2022.

***Monday, August 21<sup>st</sup> 2023***

***4:00 PM (Tea / Coffee 03.45 PM)***

***Auditorium, TIFR-H***