

## **Internal Seminar**

### **Photoluminescent Amidinate Ligated Boron Compounds**

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Four-coordinate organoboron compounds having a N<sup>N</sup> chelating ligands attracted enormous interest due to their applications in a wide range of areas like bioimaging, sensors, OLEDs, and dyes.<sup>[1]</sup> Meantime, reports on synthesis and reactivity studies of anionic amidinate [(Ar)C (NR'<sub>2</sub>)] - ligated four-coordinate boron compounds are scarce.<sup>[2]</sup> In particular, the applicability of those compounds in synthesizing light emitting materials, exploring their photo-physical properties is remains unexplored. In view of that interest, we designed a novel series of amidinate [(Ar)C (NR'<sub>2</sub>)BX<sub>2</sub>] (Ar = aryl; R' = alkyl; X = halides) based four-coordinate boron compounds by extending π-conjugation on aryl moieties, explored their photophysical and electrochemical properties. Additionally, the novel 2-(dimethylamino) phenyl ligated organo indium cation has been synthesized and characterized using multi nuclear NMR and solid-state structure analysis.

#### **References:**

1. (a) Di. Li, H. Zhang and Y. Wang, Chem. Soc. Rev., 2013, 42, 8416; (b) A. Loudet and K. Burgess, Chem. Rev. 2007, 107, 11, 4891–4932.
2. (a) J. Li, Y. Liu, S. Kundu, H. Keil, H. Zhu, R. Herbst-Irmer, D. Stalke, H. W. Roesky, Inorg. Chem., 2020, 59, 7910–7914; (b) A. V. Protchenko, J. Urbano, J. A. B. Abdalla, J. Campos, D. Vidovic, A. D. Schwarz, M. P. Blake, P. Mountford, C. Jones, S. Aldridge, Angew. Chem. Int. Ed., 2017, 56, 15098 –15102; (c) M. A. Dureen D. W. Stephan, J. Am. Chem. Soc., 2010, 132, 13559–13568.
3. R. Kannan and V. Chandrasekhar (Manuscript under preparation).

**Monday, Jan 16<sup>th</sup> 2023**

**10:00 AM**

**Seminar Hall, TIFR-H**