

# Poly(arylene iminoboranes): A new Class of Inorganic–Organic Hybrid Polymers with a B=N Doped Backbone

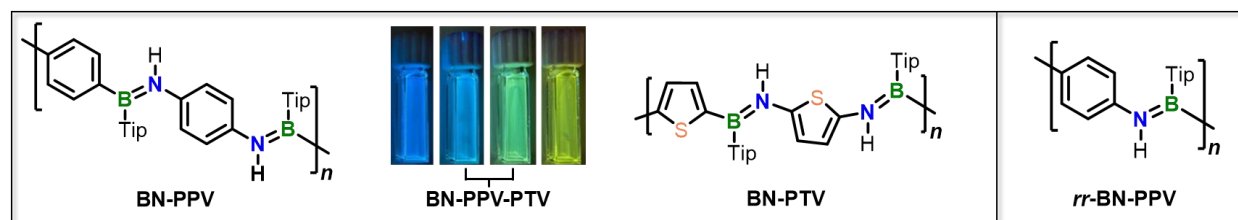
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The substitution of selected CC units by isoelectronic and isosteric BN units in polyaromatic compounds has evolved into a powerful approach for accessing novel materials with modified, often intriguing properties and functions.<sup>[1]</sup> We reported the first poly(*p*-phenylene iminoborane), which is derived from PPV through replacement of its vinylene by B=N moieties (i.e., BN-PPV).<sup>[2]</sup> Next, we targeted a BN/CC isostere of poly(thiophene vinylene) (PTV), namely, a poly(thiophene iminoborane) (BN-PTV),<sup>[3]</sup> as well as mixed copolymer congeners of both PPV and PTV.<sup>[4]</sup> The polymers and a series of monodisperse oligomers showed solid-state fluorescence and pronounced  $\pi$ -conjugation over the B=N units. We recently also accomplished the synthesis of a regioregular BN-PPV (*rr*-BN-PPV) and corresponding monodisperse oligomers, which showed fluorescence emission from a twisted intramolecular charge transfer (TICT) state.



**Figure 1:** Structures of BN-PPV, BN-PTV and their films under UV light, as well as *rr*-BN-PPV.

## References:

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