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**Superior performance of borocarbonitrides,  $B_xC_yN_z$ , as stable, low-cost metal-free electrocatalysts for the hydrogen evolution reaction<sup>1</sup>**  
HIMANSHU CHAKRABORTY, Temple Univ, MANJEET CHHETRI, SOMAK MAITRA, UMESH WAGHMARE, C.N.R. RAO, JNCASR, Bangalore — We report superior hydrogen evolution activity of metal-free borocarbonitride (BCN) catalysts. The highly positive onset potential (-56 mV vs. RHE) and the current density of  $10\text{mAcm}^2$  at an overpotential of 70 mV exhibited by a carbon-rich BCN with the composition  $BC_7N_2$  demonstrates the extraordinary electrocatalytic activity at par with Pt. Theoretical studies throw light on the cause of high activity of this composition. The high activity and good stability of BCN's surpass the characteristics of other metal-free catalysts reported in recent literature.

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