Materials of Carbon-Boron-Nitrogen Compositions

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The phase space consisting of boron, nitrogen and carbon shows a number of thermodynamically stable phases of binary and ternary compositions. There has been significant amount of work in the past on optimizing conditions to grow these phases and understanding their stability. This talk will focus on some of these interesting materials that have compositions of C, BN, CN and BCN. The effort in synthesizing hexagonal as well cubic phases of these compositions will be discussed with the goal of achieving 2D and 3D structures with specific applications in mind.