Abstract: *closo*-Boranes are inorganic 3-D sigma aromatic compounds with steric and electronic properties attractive for designing multifunctional materials. Earlier work demonstrated that 10- and 12-vertex *p*-carboranes are suitable building blocks for liquid crystals. Anionic *closo*-carbaborates have been used to design highly polar materials for LCD applications and ionic self-organizing electrolytes for battery applications. The high-lying HOMO of the decaborate dianion \([\text{closo} \text{-} B_{10}H_{10}]^{2-}\) has been exploited in the design of materials exhibiting photo-induced intra- and inter-molecular charge transfer processes. The synthesis of these new materials has required the development of new functionalization methods. For example, phenyliodination activates B-H bonds towards highly regioselective nucleophilic substitution.

Monday, April 29th, 2024
2:00 p.m. | YH4222 - Collaboratory
Yoo Seminar & Conference Hall