

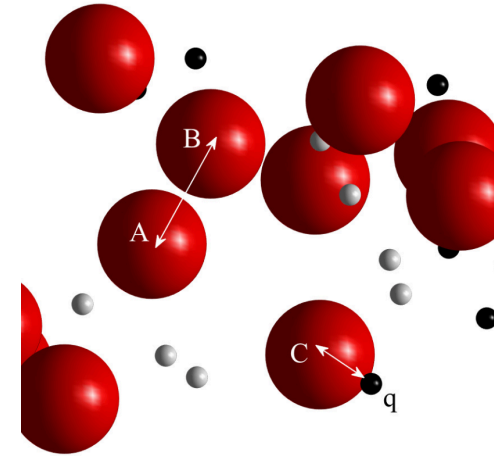
Efficient Methods for Predicting Dielectric Self-Assembly

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Dielectric effects, i.e., induced charges, are pervasive in numerous “soft” materials that self-assemble in the liquid state, ranging from biological systems to colloidal crystals. Yet, because of computational complexity their role in self-assembly is generally ignored. Thanks to algorithmic advances developed in a collaboration between members of the MRSEC Superseed and applied mathematicians at Shanghai Jiao Tong University, this problem has now been overcome, opening the way for efficient, large-scale predictive exploration of possibilities to control self-assembly by exploiting dielectric mismatch between components.



The interactions between dielectric colloids in suspension are treated via an optimized combination of strategies.

