

ELECTROSTATICS CAUSES SELF-ASSEMBLED NANOSTRUCTURES TO CHANGE SHAPE

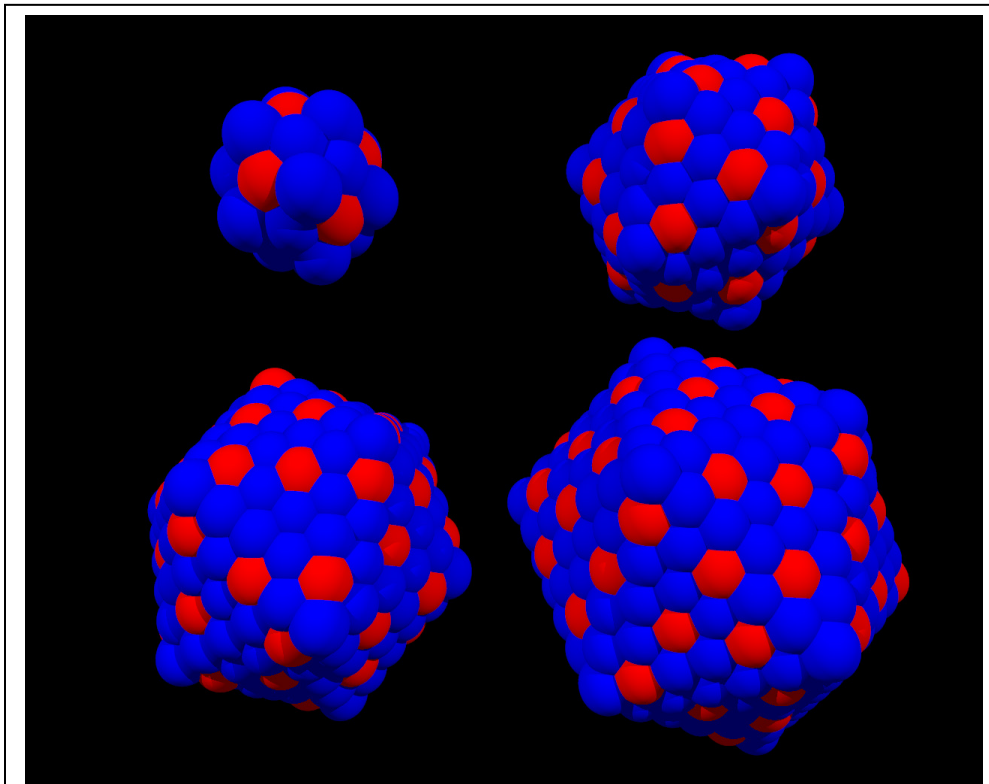
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Electrostatics is the branch of physics that deals with the forces exerted by an unchanging electric field upon charged objects. NU-NSEC researchers have found that when these objects are at the nanoscale, the electrostatic effects can be dramatic.

Standard self-assembled nanostructures usually have spherical shapes, but when the nanostructures are charged, a novel electrostatics-driven mechanism buckles them into sphere-like structures with 20 flat faces. Because the charge distribution is asymmetrical, researchers may be able to use these nanostructures to create polymer chains with specific charge sequences or to locate the interface between two immiscible fluids (immiscible fluids are unmixable, like water and oil). This unusual behavior may help in the creation of new nano sensing technologies.



The images above show how the shapes of the nanostructures are impacted by the electrostatic-driven mechanism.