

# Colloidal clusters of anisotropic particles

Bachelor/Master project

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Web: [www.mycolloids.com](http://www.mycolloids.com)

The geometry of colloidal particles plays an important role in their assembly. This is true when we look at many particles (or bulk) assemblies (PNAS, 112, 17, 5286-5290, 2015), but also when we consider assemblies of just a few particles (Figure 1).

In this project we want to study the influence of particle shape on the final geometry of clusters containing small number of particles ( $< 10$ ). The student will first use the available protocols for the preparation of clusters with spherical colloidal particles

(Figure 1) and will apply later the same procedure for the preparation of clusters from differently shaped colloidal particles (cubes, ellipsoids, etc.). Depending on the length of the research project (Bachelor or Master) the student will spend some time on the synthesis of the colloidal particles or, alternatively, he/she will use particles that have been previously prepared in the lab. Because using colloidal particles with anisotropic shape will introduce a higher degree of complexity, we expect particle shape to affect the geometry of the final clusters. The student will perform qualitative and quantitative analysis of the clusters geometry and compare the results with the data already available for spheres.

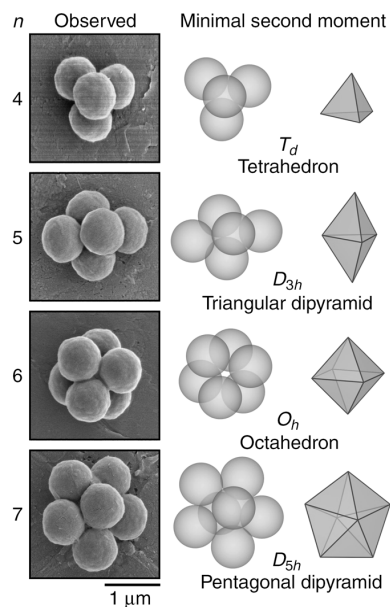


Figure 1 Clusters formed by spherical particles. From MRS Bulletin, 29(2), 91-95.

These colloidal clusters have the potential to be used in further experiments as building blocks for the realization of even more complex colloidal

structures (novel materials).

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