Colloidal Alchemy: Conversion of Polystyrene Nanoclusters into Gold

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Isotropic plasmonic clusters consisting of a controlled number of gold satellites around a silica core were fabricated by using the concept of patchy particles. The versatile chemical approach that we have developed offers the possibility to produce Platonic solids, such as tetrapods (tetrahedra), hexapods (octahedra) and dodecapods (icosahedra) like nanoclusters on a large scale i.e. in gram quantities. These plasmonic clusters, in particular the dodecapods ones, have unique plasmonic properties and may be suitable for many applications in the field of optics, biosensing, photonics. These nano-objects have indeed extraordinary optical responses including magnetic response and metafluid behavior.

![Figure 1: EDX image of well-defined SiO$_2$/Au dodecapods](image)

References

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