Assembling anisotropic colloidal building blocks

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Propositions

accompanying the thesis *Assembling anisotropic colloidal building blocks*

I The degree of surface roughness of polystyrene colloids can be controlled by the chemical component hydroquinone, which inhibits the formation of secondary nuclei during polymerization.
Chapter 2 of this thesis.

II Colloidal aggregates of random shape can be recycled into patchy particles by depositing droplets of organic solvent at the contact areas between the spheres which decreases the attractive van der Waals forces between the particles.
Chapter 3 of this thesis.

III Geometric constraints limit the reconfigurability of clusters of deformable spheres.
Chapter 4 of this thesis.

IV The distortion of a hexagonal crystal of spheres at a fluid interface induced by an elongated impurity depends on the orientation of the impurity with respect to the crystal orientation.
Chapter 6 of this thesis.

V It is surprising that Kim *et al.* did not report any surface roughness of the polymer spheres and dumbbells, while no hydroquinone was involved in the synthesis.
J-W. Kim, R.J. Larsen and D.A. Weitz, Journal of the American Chemical Society ***128****, 14374 (2006).*

VI The development of the patchy particle synthesis will lead to the fabrication of new functional materials. *G-R. Yi, D.J. Pine and S. Sacanna, Journal of Physics: Condensed Matter* ***25****, 193101 (2013); S. Ravaine and E. Duguet, Current Opinion in Colloid and Interface Science* ***30****, 45 (2017).*

VII By assembling colloidal spheres into clusters Wagner *et al.* observed both the polytetrahedron and the octahedron geometry for clusters of six spheres, but surprisingly only one geometry was reported for clusters of seven spheres.
C.S. Wagner, B. Fischer, M. May and A. Witteman, Colloid Polymer Science ***288****, 486 (2010).*

VIII Recent observations by Elbers *et al.* and Kelleher *et al.* indicate that colloids can stabilize interfaces without decreasing the interfacial area.
N.A. Elbers et al., Soft Matter ***12****, 7265 (2016); C.P. Kelleher et al., Physical Review E* ***92****, 062306 (2015).*

IX In Western society the value of practical occupations and crafts is highly underestimated.

X Changing people's views requires education, creativity and empathy.

XI Spherical and circular foods are too difficult to eat.

XII Propositions are ideas rather than facts and therefore not always true.

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