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**Flying Colloidal Carpets** ERIKA EISER, SABRINA JAHN<sup>1</sup>, University of Cambridge, NIENKE GEERTS<sup>2</sup>, University of Amsterdam — DNA plays a special role in polymer science not just because of the highly selective recognition of complementary single DNA strands but also because natural DNA chains can be made very long, yet perfectly monodisperse. Solutions of such long DNA chains are widely used as model systems in polymer science. Here, we present our recent results on the unusual self-assembly that takes place in systems of colloids coated with very long double-stranded DNA. We find that colloids coated with such long DNA can assemble into unique “floating” crystalline monolayers that are suspended at a distance of several colloidal diameters above a weakly adsorbing substrate. The formation of these 2dCrystals does not depend on DNA hybridization. These crystals can be lifted and do stay stable in the bulk. Hence they have potentially interesting applications as such ordered structures can be assembled in one location and then deposited somewhere else. This would open the way to the assembly of multi-component, layered colloidal crystals.

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