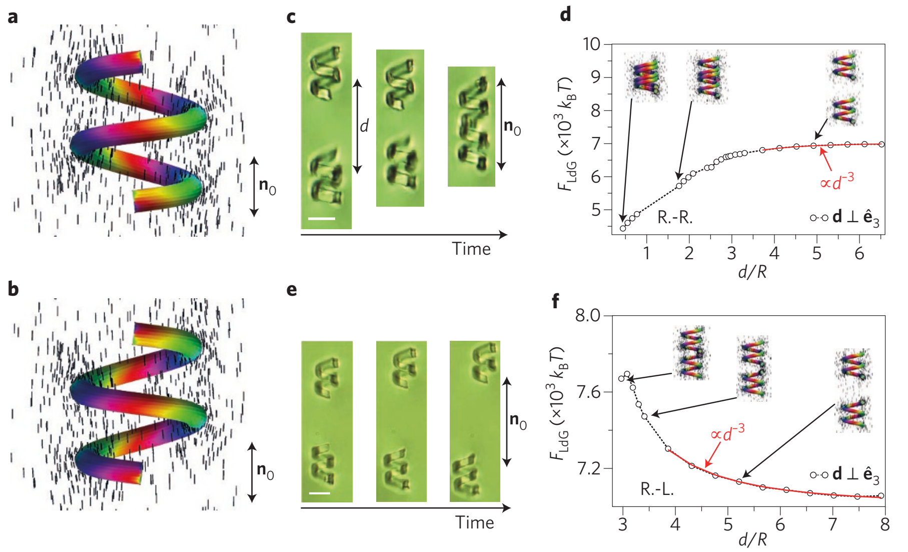

Figure 1 | Chiral colloids in an achiral liquid crystal and chirality-dependent interactions of colloids. **a**,**b**, Right- (**a**) and left- (**b**) handed springs dispersed in a liquid crystal with the helical axis parallel to the far-field orientation of the liquid crystal ($\mathbf{n}_0$). The colloids perturb the local ordering of the liquid crystal (black bars). **c**, Like-handed chiral colloids initially separated along $\mathbf{n}_0$ attract each other. **d**, The Landau–de Gennes free energy F_{LdG} of interaction of like-handed colloids decreases as the centre-to-centre distance between colloids (d) is reduced. R is the radius of the spring. **e**, Oppositely handed chiral colloids repel each other. **f**, F_{LdG} increases as the separation distance is shortened. Scale bars, 5 µm (**c**,**e**). Adapted from ref. 4, Macmillan Publishers Ltd.

when dispersed in liquid crystals, achiral colloids with different shapes and sizes, such as microspheres[5–8,11,12] and microrods[9], exhibit self-attraction leading to the formation of various types of assemblies such as chains[5,7,9,11] and lattices[5,7] that minimize the elastic strain of the liquid crystal. In contrast, the authors reveal that the interaction of two chiral colloids depends on whether they are like-handed or oppositely handed (Fig. 1c,e). The sign of the interaction is also dependent on the direction in which colloids approach relative to the far-field orientation of the liquid crystal. Impressively, numerical simulations that described the liquid crystal properties using a Landau–de Gennes free energy confirm that the relative chirality of two colloids determines whether the pair experiences a mutual attraction or repulsion (Fig. 1d,f).

The study by Smalyukh and colleagues opens future directions of inquiry, including investigations of the dynamic and equilibrium properties of liquid crystal systems containing both chiral molecules and colloids. For example, it may be possible to develop new types of colloids that capture or separate biological assemblies (for example, viruses) based on their chirality. Alternatively, new classes of reconfigurable optical metamaterials might be designed using colloids that undergo changes in chirality (for example, by twisting) upon exposure to targeted stimuli. Future studies may even provide insight into unresolved questions such as the origins of biomolecular homochirality[13]. Overall, the study makes the key point that chirality of a colloid is an important design parameter that can be leveraged when creating colloid-in-liquid crystal materials. ❐

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Correction

In the News & Views 'Organic memristors come of age' (I. Valov and M. Kozicki, *Nat. Mater.* **16,** 1170–1172; 2017), the switching time of the organic memristors was incorrectly given as in the ms range, and should have said in the µs range. This has now been corrected in the online versions of the News & Views.