

## Microsymposium

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### *Soft quasicrystals with 12- and 18-fold rotational symmetry*

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Over the past decade quasicrystalline order has been reported in many soft-matter systems. We have found quasicrystals with 12- and 18-fold rotational symmetry (Q12, Q18) in aqueous solutions of polymer micelles, which are particularly soft systems. [1] Transitions from an FCC phase to Q12 and subsequently to Q18 upon cooling could be followed by time-resolved small-angle X-ray and neutron scattering. Recent investigations using cryo-scanning electron microscopy indicate that the micelles are arranged in the form of mosaic two-length scale quasicrystals, which have recently been identified by Dotera et al. using Monte-Carlo simulations of particles with square-shoulder repulsion. The results indicate that these soft systems are special types of quasicrystals having a direct relation to the hexatic phase observed in liquid crystals.

[1] S. Fischer, A. Exner, K. Zielske, et al., *Proc. Natl. Acad. Sci.* 108 (2011) 1810.

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