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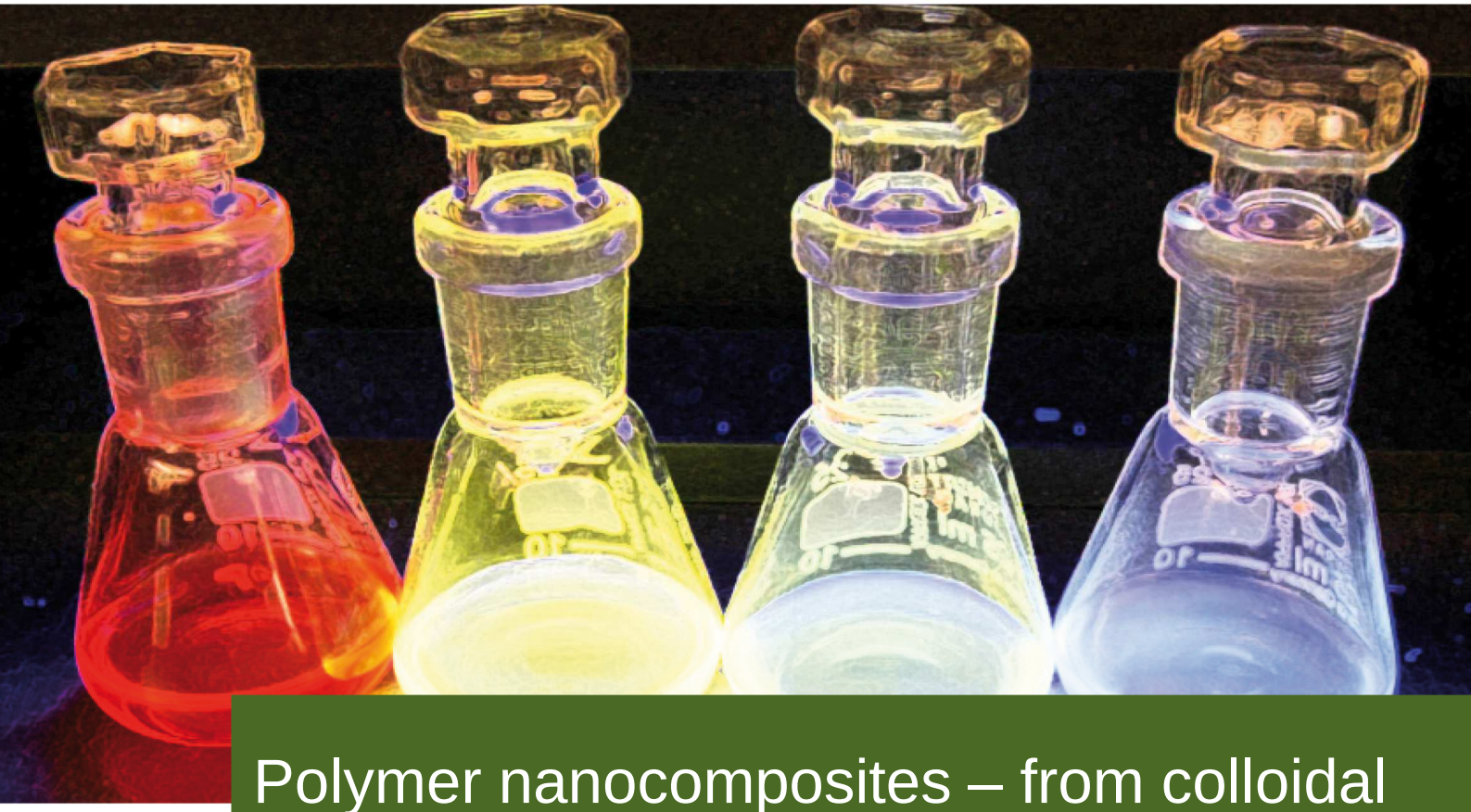

Polymer nanocomposites – from colloidal model materials to every-day commodities

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The mechanical properties of nanostructured functional polymeric materials crucially rely on the arrangement, structure and in particular connectivity of hard (undeformable) phase components, such as crystallites or filler particles in semicrystalline polymers or particle-filled elastomers, respectively. In addressing connectivity, constrained polymer chains and dynamic interphases often represent a significant fraction of the overall matrix material.

This presentation focuses on applications of NMR spectroscopy, mostly using simple low-field equipment, and complementary techniques, to elucidate the presence and properties of constrained polymer components and their role in mechanical reinforcement.