

Nanocomposite peptide hydrogels: from nanocarbon to gold nanoparticles

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Nanocomposite hydrogels are attractive soft materials with multifunctional applications. Our group has expertise on the design of minimalistic, heterochiral peptides that feature D- and L-amino acids at specific positions to modulate their self-assembling behaviour into functional nanostructures [1-3]. Recently, we became interested in introducing additional features by developing supramolecular nanocomposites with other types of nanosized components, including nanocages for chemical separation [3-4], carbon nanomaterials [6-8], and gold nanoparticles prepared in situ using the peptide as mild reductant. In this lecture, nanomorphological and supramolecular effects will be discussed to outline key lessons learnt for the future development of nanocomposites that could find a variety of applications, from sensing to therapy [9-10], and environmental remediation [3,5].

References

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Figures

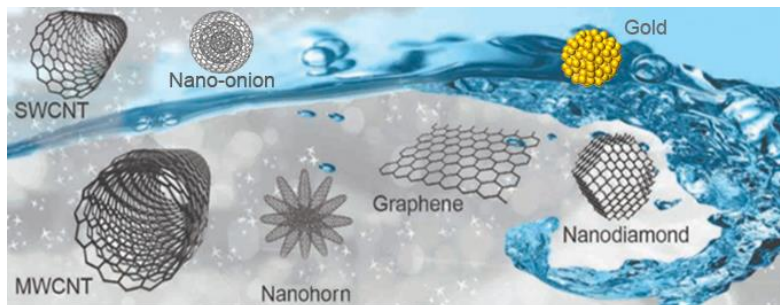


Figure 1: Nanocomposite hydrogels with various carbon nanostructures and gold nanoparticles.