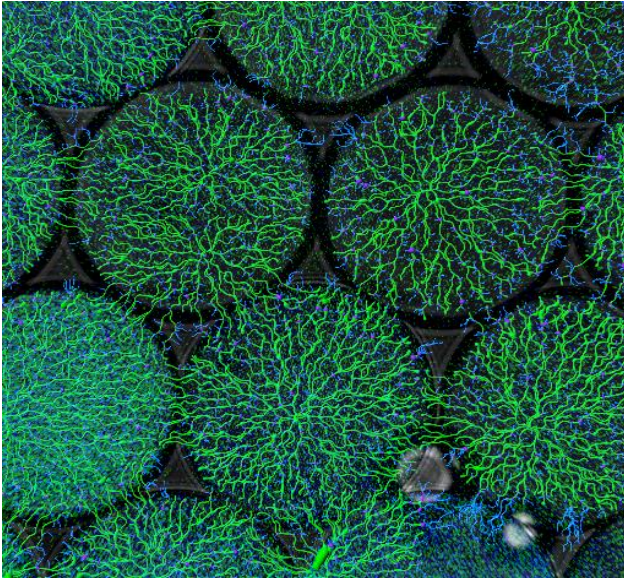


BIO-INSPIRED PROTEIN-BASED BIOMATERIALS

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Protein functions are as diverse as protein structures. The tunability and biocompatibility of proteins make them attractive candidates for use as building blocks for biomaterials engineering. This strategy provides molecular-level material design, enabling straightforward and independent control over an array of biomaterial properties. A key challenge in our research is to unveil the mechanisms of formation of micro and nano-scale protein-based capsules-gels and shells, as well as to achieve their functionalization for uses in targeted delivery of bioactive materials. The aim is to test protein microgels for their ability to act as drug carrier agents, and for the controlled release of different drug-like small molecules as well as the release of the component proteins. Advantages of these systems include compositional definition, control over topology and nanostructure, and the ability to combine multiple different functional components in a modular way.
