

ADVANCED FUNCTIONAL MATERIALS

A 3D molecular model illustrating the self-assembly of amyloid peptide nanowires. The model shows several green, ribbon-like structures representing the peptide backbone, decorated with clusters of blue and pink spheres representing functional groups. These structures are shown in various stages of assembly, from individual peptides to a large, organized fibrillar network. The background is dark brown with a diagonal gold-colored line.

SELF-ASSEMBLY

Functionalized nanowires derived from amyloid peptides are formed in a straightforward manner with remarkable control by K. Sakaguchi and co-workers. Mixing multiple modified amyloid peptides with a specific three-amino-acid residue cap drastically enhances the self-assembly. On page 4881, the enhancement affects the both steps of small oligomer formation and macroscopic fibrillization. This facile method is also effective for probe-containing peptides, thus expanding the possibilities for creating diverse classes of functionalized nanowires.