

Self-assembly of peptide based nano-materials and their applications

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ABSTRACT

Self-assembling synthetic molecules can find immense applications in biological and material sciences. The self-aggregation and misfolding of peptides and proteins has become a topic of current interest as mounting evidences indicate that the aggregation of normally soluble peptides or proteins leads to the formation of insoluble amyloid deposits which causes in many neurodegenerative diseases, such as Alzheimer disease, Parkinson's disease, Huntington's disease and Spongiform Encephalopathies¹. Self-assembly of peptide leads to various supramolecular architectures in solid state² as well as in solution state³ also. In solution state, self-assembling peptide based low-molecular-weight gel systems have become a topic of growing interest because they are expected to be useful as novel functional soft materials for tissue engineering, drug delivery⁴ and nanotechnology⁵.

References

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