

Arnon, Z., Adler-Abramovich, L., Levin, A., Gazit E. Solvent-induced self-assembly of highly hydrophobic tetra-and pentaphenylalanine peptides. *Isr. J. Chem.*; 2015: 5, 756-762. 5. **Featured in the cover of the issue.**

Abstract: Diphenylalanine peptide (FF) self-assembles into ordered structures of notable physical properties. Moreover, the ability of the phenylalanine amino acid or triphenylalanine to assemble into ordered nanostructures had been demonstrated. Herein, we explored the association potential of larger phenylalanine peptides, tetraphenylalanine, and pentaphenylalanine. A major challenge in studying the assembly of these peptides is their lack of solubility in different solvents. Yet, the remarkable capacity of acetic acid to solubilize FF was recently shown. Inspired by this, we examined whether this solvent could also be employed to dissolve these insoluble peptides. By utilizing the solvent-switch methodology, we revealed the self-assembly of tetraphenylalanine and pentaphenylalanine. The peptides were assembled into ordered autofluorescent elongated structures, which were further characterized by electron microscopy and spectroscopy analysis and could be utilized in future technological applications.