Alignment and Use of Self-Assembled Peptide Nanotubes as Dry-Etching Mask

Self-assembled diphenylalanine peptide nanotubes provide a means of achieving nanostructured materials in a very simple and fast way. Recent discoveries have shown that this unique material, in addition to remaining stable under dry conditions, rapidly dissolves in water making it a promising candidate for controlled nanofabrication without organic solvents. The present work demonstrates how this unique structure can be aligned, manipulated and used as both an etching mask in a dry etching procedure and as a lift-off material. As a further demonstration of the potential of this technique, the peptide nanotubes were utilized to fabricate silicon nanowire devices and gold nanoslits in a rapid manner.

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