

## AFM and TEM image of phenylacetylene polymerization on Rh/PVP colloidal nanoparticles.

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Rh/PVP nanoparticles were used as a new kind of catalyst in polymerization of phenylacetylene (PA). Polyphenylacetylene (PPA), purely *cis-transoidal*, was obtained with a yield up to 90% and molecular weights equal from 21 100 to 140 700. The polymerization reaction was monitored by AFM (atomic force microscopy) and TEM (transmission electron microscopy) methods. Before polymerization, spontaneous aggregation of Rh/PVP nanoparticles in methanol into dense spherical nanostructures having a tendency to form ordered superstructures upon drying, was observed. The formation and increase of PPA fibres around Rh nanoparticles was followed in time with AFM and TEM. The stretched PPA fibres adopt a helical structure with a pitch of about 5 nm.

### Adres publiczny

<http://dx.doi.org/10.1039/b800867a>

### Strona internetowa wydawcy

<https://www.rsc.org/>