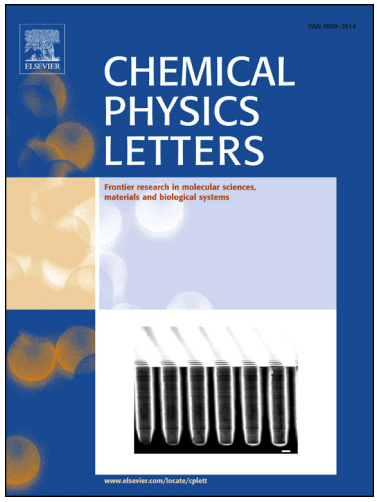

Research paper

High Pressure Infrared Spectroscopy Study on C_{60}*CS_2 Solvates

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High Pressure Infrared Spectroscopy Study on C_{60}*CS_2 Solvates

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Abstract

High pressure IR study has been carried out on C_{60}*CS_2 solvates up to 34.8GPa. It is found that the intercalated CS_2 molecules significantly affect the transformations of C_{60} molecules under pressure. As a probe, the intercalated CS_2 molecules can well detect the orietanional ordering transition and deformation of C_{60} molecules under pressure. The chemical stability of CS_2 molecules under pressure is also dramatically enhanced due to the spacial shielding effet from C_{60} molecules around in the solvated crystal. These results provide new insight into the effect of interactions between intercalants and fullerenes on the transformations in fullerene solvates under pressure.

Key words

high pressure, IR spectra, fullerene, C_{60}*CS_2 solvates

1 Introduction