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# High Pressure Infrared Spectroscopy Study on C<sub>60</sub>\*CS<sub>2</sub> Solvates

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## Abstract

High pressure IR study has been carried out on C<sub>60</sub>\*CS<sub>2</sub> solvates up to 34.8GPa. It is found that the intercalated CS<sub>2</sub> molecules significantly affect the transformations of C<sub>60</sub> molecules under pressure. As a probe, the intercalated CS<sub>2</sub> molecules can well detect the orientational ordering transition and deformation of C<sub>60</sub> molecules under pressure. The chemical stability of CS<sub>2</sub> molecules under pressure is also dramatically enhanced due to the spatial shielding effect from C<sub>60</sub> 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<sub>60</sub>\*CS<sub>2</sub> solvates

## 1 Introduction

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