## Accepted Manuscript

Research paper

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

Mingrun Du, Miao Zhou, Mingguang Yao, Peng Ge, Shuanglong Chen, Xigui Yang, Ran Liu, Bo Liu, Tian Cui, Bertil Sundqvist, Bingbing Liu

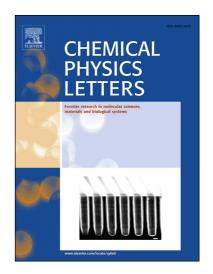
PII: S0009-2614(16)30936-8

DOI: http://dx.doi.org/10.1016/j.cplett.2016.11.047

Reference: CPLETT 34354

To appear in: Chemical Physics Letters

Received Date: 13 September 2016 Revised Date: 21 November 2016 Accepted Date: 24 November 2016



Please cite this article as: M. Du, M. Zhou, M. Yao, P. Ge, S. Chen, X. Yang, R. Liu, B. Liu, T. Cui, B. Sundqvist, B. Liu, High Pressure Infrared Spectroscopy Study on C<sub>60</sub>\*CS<sub>2</sub> Solvates, *Chemical Physics Letters* (2016), doi: http://dx.doi.org/10.1016/j.cplett.2016.11.047

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

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

Bingbing Liu,, a\*

E-mail: liubb@jlu.edu.cn, TEL: 86-431-85168256

<sup>a</sup>State Key Laboratory of Superhard Materials, Jilin University, Changchun 130012,

P.R. China

Mingguang Yao, ab

E-mail:yaomg@jlu.edu.cn,

<sup>a</sup>State Key Laboratory of Superhard Materials, <sup>b</sup>College of Physics, Jilin University,

Changchun 130012, P. R. China

\*Corresponding author:

**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 CS2 molecules can well detect the orietanional 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 spacial shielding effet 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

## Download English Version:

## https://daneshyari.com/en/article/5378282

Download Persian Version:

https://daneshyari.com/article/5378282

<u>Daneshyari.com</u>