

INVESTIGATION ON ULTRAHIGH-PRESSURE INDUCED CHEMICAL REACTIONS BY HIGH RESOLUTION MASS SPECTROMETRY

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Pressure is one of the most important physical factors and a powerful thermodynamic variable. As the recent great advancements in high pressure technologies, numerous unique structures and behaviors have been discovered under high pressures, which is very significant for the underlying evolution of physics and chemistry of the Earth and the planetary system. The pressure effect on organic chemicals involves promoting intra/inter-molecular interaction, inducing crystalline phase transitions or even triggering chemical reactions, which allows producing new dense materials with peculiar structure and properties. However, as the reaction paths are complex and the corresponding products are in mixed phases, most of the reaction mechanisms in terms of high pressure are not clear so far. The mass spectra are distinctive to every molecule that will be pre-separated by chromatographic columns, and thus lead to a ready identification of the compounds. Applying high resolution mass spectrometry with ultra-high sensitivity is greatly helpful for the detection of small amounts of polymeric products synthesized by high pressure methods.

Biography

Yajie Wang has completed her PhD in Organic Chemistry at the University of Chinese Academy of Sciences (UCAS). She has been working as a Specialist Associate Staff Scientist at the Center for High Pressure Science & Technology Advanced Research (HPSTAR) since July, 2017. Her research interest is focused on high pressure chemistry and the development of chemical analysis method using high resolution mass spectrometry.

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