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Response to Stress in Molecular Loops probed by Raman Spectroscopy M. PENA-ALVAREZ, M. TARAVILLO, E. DEL CORRO, V.G. BAONZA, MALTA, Univ. Complutense of Madrid, Spain, M. KERTESZ, Georgetown Univ. Washington, USA, S. YAMAGO, Kyoto Univ. Japan, P. MAYORGA, J.T. LOPEZ-NAVARRETE, J. CASADO, Univ. Malaga, Spain — CycloPara-Phenylenes (CPPs) are cyclic molecules formed by *para*-substituted benzenes. They are in the spot-light of chemistry because, in addition to their simple hoop-shaped π-conjugated structure, CPPs are thought of as building blocks for the controlled synthesis of carbon nanotubes (CNTs). Although they were firstly synthesized in 2008, their physico-chemical behavior is still poorly known, despite the interest in their optical properties, reactivity and their use as host agents in supramolecular chemistry. Studies about their possible analogies/differences with CNTs and other sp^2-carbon structures are still lacking. Pressure-dependent Raman experiments provide key information about all the above properties, so here we present a Raman study on CPPs ranging from [6]CPP to [12]CPP. The pressure-induced changes in their vibrational spectra are analyzed in order to check whether pressure induces conformational changes and how these compare to those previously reported in their linear oligophenylenes analogs. To explore their ability to form host-guest complexes with other carbon species, CPP+fullerene mixtures subjected to stress and their recovered samples are studied, concluding that the complex C_{60}@[10]CPP has been formed.

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