Carbon chemistry in evolved stars

Jose Cernicharo[1*†]

[1]Instituto de Física Fundamental – CSIC – Spain

I will present the chemistry of carbon in C-rich evolved stars. The characterization of the molecular content of the ejecta of these objects has been obtained through sensitive optical, infrared and millimeter and submillimeter wave spectroscopic observations using the largest telescopes at all wavelengths. A view of the chemical content derived for these objects will be presented. The data gathered from these astronomical observations are the basic input for novel laboratory experiments within the framework of the Nanocosmos synergy project of the ERC. In these experimental setups, in particular in the stardust machine, we simulate at the best the physical and chemical conditions prevailing in the photosphere of evolved stars. The first experiments that we are going to present in this conference are related to the formation of carbon clusters and hydrocarbons as a first step to the formation of dust grains.

*Speaker

†Corresponding author: jose.cernicharo@cisc.es