LASER ABLATION OF SOLID ORGANIC PRECURSORS: AN INNOVATIVE APPROACH FOR THE LABORATORY GENERATION OF CHEMICAL SPECIES

LUCIE KOLESNIKOVÁ, *Department of Analytical Chemistry, University of Chemistry and Technology, Prague, Prague, Czech Republic*; IKER LEÓN, ELENA R. ALONSO, SANTIAGO MATA, JOSÉ L. ALONSO, *Grupo de Espectroscopia Molecular, Lab. de Espectroscopia y Bioespectroscopia, Unidad Asociada CSIC, Universidad de Valladolid, Valladolid, Spain*.

The high amount of reactive species participating in the chemistry in the Earth′s upper atmosphere, interstellar medium, or combustion processes motivates laboratory experimentalists to develop efficient methods for the molecular *in situ* generations to characterize these species spectroscopically. In the present contribution, we propose a new approach based on the laser ablation of solid organic compounds. A proof-of-concept experiment is performed using diaminomaleonitrile and uridine as prototypical precursors. Once formed in the throat of our laser ablation source, the products are entrained in the carrier gas, stabilized in the cold environment of the supersonic expansion, and are monitored by high-resolution chirped pulse Fourier transform microwave spectroscopy. We experimentally demonstrate a simultaneous formation of an impressive number and variety of species, both known and unknown. With these inspiring achievements in hands, we extend the boundaries for the molecular *in situ* generations beyond traditional techniques such as electric discharge and pyrolysis.