

From Interstellar Ices to PAHs

A symposium to honor Lou Allamandola's Contributions to the Molecular Universe
Annapolis, MD, USA - September 13th to September 17th, 2015

INVITED TALK

Interstellar ice and the composition of hot cores

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Pathways leading to the formation of complex organic molecules in regions of massive and low-mass star formation will be described. Catalytic reactions on grain surfaces can lead to a large variety of organic species, and models of molecule formation by atom additions to multiply-bonded molecules will be presented. The subsequent desorption of these mixed molecular ices can initiate a distinctive organic chemistry in hot molecular cores. The general ion-molecule pathways leading to even larger organics will be outlined. The predictions of this theory will be compared with recent interferometric maps of massive star forming regions to show how possible organic formation pathways in the interstellar medium may be constrained. In particular, the explanation of observed trends in the known interstellar organics, in predicting recently-detected interstellar molecules, and, just as importantly, non-detections, will be discussed.