

Effect of swift ion irradiation on pyrene

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Polycyclic Aromatic Hydrocarbons (PAHs) are believed to represent 15% of all carbon in the ISM both in gas and in solid phases [1]. When PAHs are exposed to ionizing radiation, they can be destroyed. It is therefore important to study the resistance of PAHs to ionizing radiation and to predict their lifetime in space. We report the results of an experimental study of the irradiation of the PAH molecule pyrene at 20K. The experiments were performed at the Ice Chamber for Astrophysics-Astrochemistry [2] at the Tandatron facility of ATOMKI (Debrecen, Hungary). Fig. 1 shows the decrease of the pyrene 710 cm^{-1} IR band area as a function of deposited local dose for 11 projectiles.

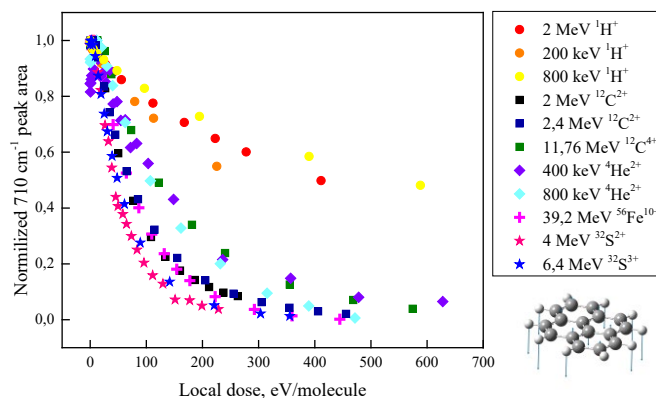


Figure 1: Normalized 710 cm^{-1} pyrene IR band as a function of local dose. Irradiations with 11.67 MeV C and 39.2 MeV Fe were performed at GANIL-IRRSUD

Acknowledgements: This research has been supported by Europlanet 2024 RI. Europlanet 2024 RI has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871149.

References

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