



# Impact of aliphatic bonds on the stability of VUV photo-processed PAHs under relevant astrophysical conditions

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*This work supports a scenario in which the evaporation of nanograins with mixed aliphatic and aromatic composition followed by VUV photo-processing results in both the production of the carriers of the 3.4  $\mu\text{m}$  AIB by methyl sidegroups and in an abundant source of smaller hydrocarbons at the border of PDRs. This process also results in the formation of PAHs containing pentagonal ring. Finally, our study supports the role of isomerization processes in PAH photofragmentation, including the H-migration process [7], which could lead to an additional contribution to the 3.4  $\mu\text{m}$  AIB.*