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P29 - Comparative Study of Microstructured Polymer Foils using STIM with H, He and Li ions

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Scanning Transmission Ion Microscopy (STIM) provides structural images based on the energy loss of swift ions passing through the sample and therefore it depends on local mass density. That quality makes the technique useful for morphological analysis of microstructures fabricated on homogeneous substrates such as polymer foils.

Proton Beam Writing (PBW) is an important technique for fabrication of various devices with applications on different areas such as microfluidics, tissue engineering substrates and microphotonics, among others. Microstructures obtained by PBW can be an interesting object of study by STIM when fabricated on homogeneous substrates. In this case, STIM can be an important tool for morphological characterization.

In this work we present a study of two different structures obtained by PWB and subsequently submitted to STIM measurements using three different ions, namely protons, alpha particles and Li^{+3} ions, in order to evaluate the differences between the analysis by each particle beam considering the energy resolution achieved by them and the effects on the resulting images. The results indicate that ions heavier than protons may provide distinct information about the microstructures under study.

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