

Scanning force microscopy of surface damage created by fast C₆₀ cluster ions in CaF₂ and LaF₃ single crystals

El-Said AS, Aumayr F, Della-Negra S, Neumann R, Schwartz K, Toulemonde M, Trautmann C, Voss KO
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Single crystals of CaF₂ and LaF₃ were exposed to 30-MeV C₆₀ clusters from the tandem accelerator in Orsay, extending earlier irradiation experiments with monoatomic swift heavy ions to larger energy loss values. The irradiated crystal surfaces were investigated by scanning force microscopy (SFM) in contact mode. Topographic images reveal nanometric hillock-like structures protruding from the surface at each cluster impact site. The hillock diameter and height are analyzed and compared to monoatomic projectiles.