

## **Sputtering of thin films of bariated molecules arachidic-acid by large noble gas clusters**

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Coarse-grained molecular dynamics computer simulations have been employed to investigate the sputtering process of a multilayer organic system composed of long, well-organized linear molecules induced by an impact of slow clusters composed of large number of noble gas atoms. The organic system is represented by Langmuir-Blodgett multilayers formed from bariated molecules of arachidic acid. The energy transfer pathways, the sputtering yield, surface modifications and the kinetic energy distributions of ejected species have been analyzed as a function of the kinetic energy of an Ar<sub>872</sub> cluster projectile and the thickness of deposited multilayer. The analysis of the energy transfer pathways demonstrates quite clearly that the physics of ejection by these large and slow clusters is distinct from the ejection events stimulated by the popular SIMS clusters: C<sub>60</sub>, Au<sub>3</sub> and SF<sub>5</sub>. It has been shown that organic molecules are ejected by direct interactions with the projectile atoms in a process described as side-sputtering.