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Temperature Programmed Desorption Study of Dodecanethiol Self-Assembled Monolayers on Ag SIMONA RIEMAN, NICHOLAS CLARK, JENNIFER WALTERS, DANIEL FIELD, HEIKE GEISLER, CARL VENTRICE, Texas State University — The desorption kinetics of dodecanethiol self-assembled monolayers grown on Ag films has been studied using temperature programmed desorption. The self-assembled monolayers have been grown either in solution or by vapor deposition in UHV. The direct detection of dodecanethiol by the residual gas analyzer gives a complex spectrum due to multiple cracking fragments that are produced during the ionization of the molecule. The temperature programmed desorption measurements indicate that desorption of the self-assembled monolayer occurs in a two-stage process: dissociation of the alkane chain followed by desorption of the sulfur from the surface. Alkane chain fragments other than methane are observed to desorb over a range of ∼150°C to ∼220°C. Methane desorption starts at ∼100 C and persists to ∼350°C. In addition, the desoption of sulfur is observed starting at ∼220°C.

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