Correction

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Use of Condensation Figures To Image Low-Energy Ion Beam Damage of Monolayer Films

Thomas E. Kane, Vincent J. Angelico, and Vicki H. Wysocki*

(Anal. Chem. **1994,** *66,* 3733−3736).

Due to a publishing error, Figure 2 was inadvertently missing from page 3735 and a line of text was missing from the correction subsequently printed (*Anal. Chem.* **1994**, *66*, 4564).

Monolayer films are bombarded by low-energy (10−100 eV) ion beams, and condensation figures (CFs), or breath figures, are used to image the damage. The monolayer films are prepared on gold using long-chain alkanethiols ($R(CH_2)_nSH$), where R is the polar ω-terminal group, OH ($n = 11$) or $[N(CH_3)_3^+Br^-]$ ($n = 20$). After bombardment, the films are removed from vacuum, and clean water vapor is allowed to condense onto the monolayer films, forming droplet patterns. Differences in water droplet size, shape, and population density per unit area are observed between the damaged and undamaged monolayer regions, due to differences in surface polarity between the undamaged polar thiolates and those that have lost the ω-terminal group via ion−surface collisions. The final droplet pattern illustrates the dimensions and shape of the low-energy ion beam. The ion beam damage site observed is a well-defined, cross-shape 8 mm × 6 mm, which is smaller than the dimensions of the surface. In order to improve the focusing of the ion beam, a leaky dielectric ELFS tube lens is added to the lens assembly prior to the surface, at the entrance of the first quadrupole (a second quadrupole is positioned after the surface to collect and analyze the scattered ion flux). With the ELFS lens in place, the resulting cross shape is thinner, and the horizontal portion of the cross is greatly diminished, as expected. Magnification of the damaged apolar spot region in both cases yields spherical water droplets, smaller in diameter than those observed for the undamaged polar regions.

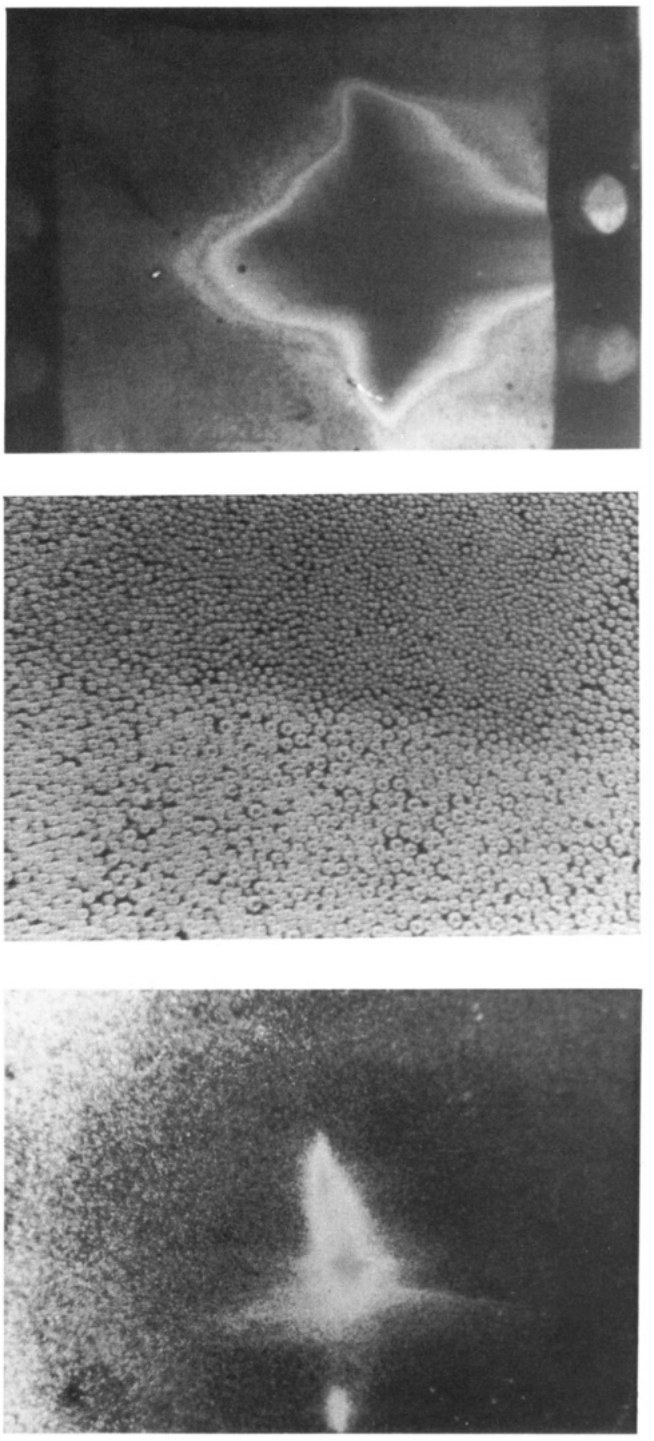

Figure 2. CF images. (a, top) $AuS(CH_2)_{11}OH$ monolayer film after damage by a 70 eV Ar^+ beam for 4 h. (b, middle) Closeup of an edge of the damage region above, illustrating the different droplet patterns. (c, bottom) $[AuS(CH_2)_{20}N(CH_3)_3^+Br^-]$ monolayer after being damaged for 4 h by a 70 eV Ar^+ beam with a leaky dielectric lens positioned at the entrance to Q1.