

**Gao *et al.* Reply:** In the preceding Comment, Zhao *et al.* [1] suggest that the conductance transitions reported in our Letter [2] were caused by tip-induced changes in the tip to sample distance, i.e., effective conductance changes due to protrusions from the otherwise flat surface as opposed to real changes in the conductance of the film itself. This is an interesting possible explanation for the  $I$ - $V$  curves we presented. We wish to point out, however, that the main conclusion of our Letter is unaltered: The conductance transition results from the electric field pulse inducing local disorder into the film.

It is clear that without the introduction of disorder the crystalline film would simply relax elastically to its original height after the write pulse. In our experiments the recorded marks remain stable for more than a few days. Disorder or defects of some kind are required to stabilize a long term change in surface morphology. The disorder may be due to the introduction of a small amorphous region under the tip, as suggested by the results from the bulk films. [Differences in the threshold field in the bulk measurement versus the scanning tunneling microscopy (STM) measurement are to be expected, due to the use of different contact geometries.] Alternatively, the disorder may have a different origin in the case of the local STM probe, for example, the introduction of a small crystal defect such as a dislocation loop. Recent images of the disorder in the STM are consistent with either mechanism [3].

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