

ELECTRONIC ARTICLE

Measuring discrete feature dimensions in AFM images with image SXM

BARRY R. BICKMORE,^{1,†} ERIC RUFÉ,¹ STEVE BARRETT,² AND MICHAEL F. HOCELLA JR.¹

¹Department of Geological Sciences, 4044 Derring Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061, U.S.A.

²Surface Science Research Centre, University of Liverpool, Liverpool L69 3BX, U.K.

ABSTRACT

A suite of macros for the freeware image analysis program, Image SXM, are described. These macros are designed to measure the perimeter, horizontal area, and volume of discrete features in AFM images, obtaining accurate and consistent estimates. Directions for using the software and example applications are also given. Such tools allow one to perform tasks that would otherwise be extremely tedious or next to impossible. Examples include calculating reaction rates from time-series images of reacting particles or etch pits with complex shapes and classifying objects based on their dimensions.

* This article is designed to be read on a computer with internet access. The full text of the article can be obtained in pdf format at <http://gmr.minsocam.org/Papers/v1/v1n5/v1n5abs.html>.

† Present address: Department of Geology, Brigham Young University, Provo, UT 84602 U.S.A.

ORIGINALLY PUBLISHED IN GEOLOGICAL MATERIALS RESEARCH ON NOVEMBER 15, 1999, 10 PAGES, 9 FIGURES, 1 MOVIE.