Surface Science Laboratory Use Request Form

Project Title: _____

Requestor/User(s): _____

PI/Research Advisor(s): _____

Overview & Structure

The Surface Science Laboratory (SSL) is housed in the Department of Materials Science & Engineering at Boise State University. The instrumentation in the SSL was purchased using grant funding secured by members of the Nanoscale Materials and Device Group (NMDG, boisestate.edu/nano). As a result, the primary focus of the SSL is undergraduate and graduate student research in support of NMDG projects. However, to enable and foster interdisciplinary research on other novel material systems and devices, the members of the NMDG have chosen to make SSL resources available to outside users. In order to keep costs low, the instruments are not covered by service agreements, and thus, great care must be exercised in using and operating the tools.

Available Equipment

Details regarding SSL equipment and capabilities can be found on the SSL website (https://www.boisestate.edu/nano/ssl/). The primary tools available are:

- FEI Phenom tabletop SEM
- 3 Bruker (formerly Veeco/Digital Instruments) scanning probe microscopes
  - Full suite of SPM-based techniques (including a variety of electrical and magnetic imaging modes such as KPFM, CAFM/TUNA, and MFM)
  - Hysitron TS75 TriboScope

For projects originating outside the NMDG (e.g., internal or external academic researchers, government agencies, or industry partners), the Phenom SEM and a Dimension 3100 SPM with a Nanoscope IV controller are available for use by qualified outside users following training and certification by SSL staff. Two other SPMs with Nanoscope V controllers are also available (a Multimode 8 and a Dimension Icon/FastScan), but imaging with these systems is performed by SSL personnel given the lack of service agreements and the high cost of repairing the SPMs should they incur damage. For the same reason, whether users will be trained to use the Hysitron TriboScope independently or only work with SSL personnel to gather data will be decided on a case-by-case basis.

User Training & Costs

To help offset costs associated with maintaining the laboratory and equipment, as well as training and support of users by lab personnel, nominal user fees are charged for use of the SSL (see the **SSL Fee Schedule**). Because of the time investment required to train new users, whether a user will be trained to use the SEM or SPM independently or instead work with SSL personnel to gather the desired data will be decided on a case-by-case basis. We want to ensure that those users being trained will be likely to use the SSL over a long period of time (at least a year) and with adequate frequency (several times a semester) to minimize the need for retraining. To aid us in making this assessment, please fill out the table below.

Name(s)	Institution & Title	Length of project/SPM use	Email Address	Frequency of SPM use
Jane & John Doe	BSU undergraduate researchers	Summer	user@domain.net	Weekly throughout summer

Acknowledgment of the SSL

All written publications (e.g., posters, papers, conference proceedings) and oral presentations that utilize primary and/or secondary data obtained using the equipment housed in the SSL should acknowledge the SSL and **include the make(s) and model(s) of instrumentation employed**.[1] The SSL staff can assist you in crafting an appropriate experimental description. Depending upon the extent of involvement, we ask that you also consider including as co-authors SSL staff members if they contribute significantly to a project.

By signing below, you acknowledge that you have read and agree to abide by the above as well as the **SSL Policies**, which are incorporated herein by reference.

User Signature: _____   **Date:** _____

Advisor Signature: _____   **Date:** _____

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[1] Examples of primary data include AFM data channel images or force curves. Secondary data include plots derived from the results of image or data analysis.

Boise State University Surface Science Laboratory

Please answer the following questions to the best of your knowledge/ability in order to give us a better idea of the goals, scope, and feasibility of your proposed project.

Proposed Project Description

Goal(s) of experiment(s):

Specific description of sample(s):

AFM/SPM/Nanoindentation technique(s) and/or SEM imaging required:

Observables (i.e., what form/type of data are you hoping to obtain?):

Literature reference(s) to similar work:

By signing below, I indicate that I have read and agree to all of the terms and conditions outlined in the **Surface Science Laboratory Use Request Form** and **Fee Schedule.**

User Signature: _____   **Date:** _____

Advisor Signature: _____   **Date:** _____