

## For information gathering only, required electronic form at: <u>http:/facilities.mrl.uiuc.edu/proposal/</u> Paper form is no longer accepted.

| Title of Research Proposal:  |   |  |  |  |
|--|---|--|--|--|
|  | Banner Account No. fo   | or University of Illinois users:   |  |  |
| ☐ New  | □ Change of scope   |  |  |  |
| <ul> <li>Materials Science</li> <li>Polymers</li> <li>Earth Sciences</li> <li>Engineering</li> </ul> | <ul> <li>Physics</li> <li>Medical Applications</li> <li>Environmental Sciences</li> <li>Instrument development</li> </ul> | <ul> <li>Chemistry</li> <li>Biological &amp; Life Sciences</li> <li>Optics</li> <li>Other</li> </ul>   |  |  |
|  | <ul> <li>New</li> <li>Materials Science</li> <li>Polymers</li> <li>Earth Sciences</li> </ul>                              | Banner Account No. for         New       Change of scope         Materials Science       Physics         Polymers       Medical Applications         Earth Sciences       Environmental Sciences |  |  |

# 1. About Your Investigators (check those intending to perform on-site research at the MRL)

| Generation Facility User:              |              | Principal Investigator /       | Principal Investigator / Faculty Advisor: |  |  |
|--|--------------|--------------------------------|---|--|--|
| First Name:                            |              | First Name:                    | First Name:                               |  |  |
| Last Name:                             |              | Last Name:                     |   |  |  |
| Department/Employer:                   |              | Department/Employer:           | Department/Employer:                      |  |  |
|  |              |                                |   |  |  |
| Employment Level:                      | Citizenship: | Employment Level:              | Citizenship:                              |  |  |
| Work Address:                          |              | Work Address:                  | Work Address:                             |  |  |
|  |              |                                |   |  |  |
|  |              |                                |   |  |  |
|  |              | Work Phone:                    |   |  |  |
| Work Phone:                            |              | Email:                         | Email:                                    |  |  |
| Email:                                 |              | Is this person also to be a us | er? 🗖 yes 🗖 No                            |  |  |
| (Optional) FAX:                        |              | (Optional) FAX:                | (Optional) FAX:                           |  |  |
| (Optional) Alternate Phone (cell/lab): |              | (Optional) Alternate Phone     | (Optional) Alternate Phone (cell/lab):    |  |  |

Collaborators and Contacts (i.e. FSMRL facilities staff):

# 2. About Your Project

| Which general techniques do you intend to use (check all that apply)?  |   |   |   |
|--|---|---|---|
| Center for Microanalysis   | s of Materials  |   |   |
| Electron Microscopy  | Surface Analysis  | Scanning Probe<br>Microscopy  | X-ray Diffraction &<br>Scattering   |
| <ul> <li>SEM</li> <li>EDX</li> <li>FEG</li> <li>CL</li> <li>EBSP</li> <li>FIB</li> <li>Cross-section</li> <li>TEM Preparation</li> <li>Nano-Fabrication</li> <li>TEM / STEM</li> <li>EDX</li> <li>FEG</li> </ul> | <ul> <li>□ AES (Auger)</li> <li>□ SIMS</li> <li>□ TOF-SIMS</li> <li>□ XPS / ESCA</li> </ul> | <ul> <li>AFM</li> <li>UHV-SPM*</li> <li>STM*</li> <li>UHV VT-STM</li> <li>Nano-Indentation</li> <li>Nano-Scratch</li> </ul> | <ul> <li>High Resolution XRD</li> <li>Powder Diffraction</li> <li>Four Circle XRD</li> <li>SAXS</li> <li>XRF</li> <li>Other (detail below)</li> </ul> |
| HR GIF   | RBS   | Profilometry  | Other   |
| ☐ PEELS<br>□ LEEM*   | <ul><li>Ion Implant*</li><li>Other (detail below)</li></ul>                                 |   | <ul> <li>Optical Microscopy</li> <li>Specimen Preparation</li> </ul>  |
| * These techniques require a more detailed proposal and/or research plan (contact appropriate staff member for info)   |   |   |   |

| Laser and Spectroscopy Facility<br>Spectroscopy            | Microscopy      | Other            |
|--|-----------------|------------------|
| $\Box$ PL $\Box$ PLE $\Box$ PL(t) $\Box$ Raman $\Box$ FTIR |                 | Pump-probe       |
|  | □ NSOM          | Diffraction      |
| □ Sum Frequency generation                                 | □ Spectroscopic | Laser treatments |
| Reflectance/absorption transmission                        |                 |                  |
| □ Fluorescence   |                 |                  |
| Ellipsometry   |                 |                  |
| *  |                 |                  |

| MicroFabrication Facility |                           |                     |               |
|---------------------------|---------------------------|---------------------|---------------|
| □ Vacuum Deposition       | Dry Etching Tools         | e-Beam Lithography  | □ Furnaces    |
| Bulk Crystal Growth       | Cleanroom                 | Bonding Stations    | Planarization |
| □ Nano Tube Growth        | (Photolithography and Wet | Optical Microscopes |               |
|                           | Chemistry)                | -                   |               |

| be performed. Be specific with                            |                                    | you would like to obtain or the fabrication to<br>rformance requirements (e.g. sensitivity,<br>lse and why. : |
|---|------------------------------------|---|
| Other:  | □ In-situ treatment                | Remote access/ control  |
| Describe the overall research p<br>scientific importance: | roject related to the work you int | end to do at the FSMRL facilities, and its  |
| how many specimens will be ex                             |                                    | pabilities of the FSMRL facilities? Roughly,<br>he approximate duration of the project and<br>project?        |
| Describe any preliminary resea                            | rch you have performed:            |   |

| 3. | About | Your | Needs |
|----|-------|------|-------|
|----|-------|------|-------|

| How would you rate your (the primary user) experience (hands-on) with same/similar materials   |                       |                        |          |  |
|--|-----------------------|------------------------|----------|--|
| <b>characterization or fabrication tech</b><br>Novice Some Knowledge   |                       | □ Extensive Experience | □ Expert |  |
| <b>Do you want instrument training (regardless of prior experience)?</b><br>If yes, for which investigator(s) and for for the investigators to be trained? | equired for self use, | □ Yes □ N              | 0        |  |
| Indicate your anticipated need for staff assistance while performing the proposed experiments:   |                       |                        |          |  |
| □ Extensive □ Some   |                       | ttle                   | None     |  |
| Anticipated extent of any specimen preparation in the FSMRL Facilities:  |                       |                        |          |  |

Usage Agreement:

This proposal process is for academic research usage of the facilities and access to the expertise available at the Frederick Seitz Materials Research Laboratory Central Facilities at the University of Illinois at Urbana – Champaign. A *University of Illinois Facilities Usage Agreement* must also be executed if any work (i.e. "hands-on") is to be performed by the user at the University of Illinois.

Note: Usage that is proprietary or connected with a proprietary project requires the execution of a *University of Illinois Technical Testing Agreement*, instead of this form. These forms may be obtained from a center staff member or the FSMRL offices.

Intent-to-publish. As a condition for performing nonproprietary academic research at the FSMRL Central Facilities, users are expected to publish any publishable results obtained from the research at the FSMRL. The following acknowledgement must be included in all publications that incorporate any results obtained through the FSMRL facilities:

## ... was carried out in part in the Frederick Seitz Materials Research Laboratory Central Facilities, University of Illinois, which is partially supported by the U.S. Department of Energy under grants DE-FG02-07ER46453 and DE-FG02-07ER46471.

The staff of the FSMRL Central Facilities frequently makes a major contribution to the research of the facility users. They can have an important scientific role through the planning and realization of experiments, through the analysis and interpretation of data, or through a full collaboration in the research. When this occurs, the staff person should be included as a co-author on papers.

By submission, I agree to all terms specified in this proposal including the intent-to-publish polices and the required acknowledgement for all publications or presentations. I also attest to the non-proprietary character of the research work to be performed and that no proprietary information is to be generated as indicated by the terms of the funding grant or contract (supporting documentation to be supplied to FSMRL upon request). I also understand that copies of all material to be published must be supplied to the FSMRL prior to or at the time of submission for publication. I will also provide the FSMRL with reprints, when available, and the full reference following any publication or presentation.<sup>\*</sup>

<sup>\*</sup> Please address these materials to Ramona Simpson at the FSMRL administration office, 104 S. Goodwin Ave., Urbana, IL 61801.