

**7<sup>TH</sup> SSRL SCHOOL ON SYNCHROTRON X-RAY SCATTERING TECHNIQUES  
IN MATERIALS AND ENVIRONMENTAL SCIENCES: THEORY AND APPLICATION  
TUESDAY 03 JUNE / THURSDAY 05 JUNE 2014**

| Tuesday, 03 June 2014 Building 040, Sycamore Conference Room (195) |  |
|--|--|
| 8:00 – 8:50 AM   | Registration – <i>Coffee and Light Refreshments</i>  |
| 8:50 – 9:00 AM   | Introductory Remarks   |
| 9:00 – 10:00 AM  | Introduction   |
| 10:00 – 10:45 AM   | What Does a Scattering Pattern Say About a Sample (Peak Shape, Position, and Intensities)? – Apurva Mehta  |
| 10:45 – 11:05 AM   | <i>Break (20 minutes)</i>  |
| 11:05 – 11:35 AM   | Introduction to Reciprocal Space – Apurva Mehta  |
| 11:30 – 12:15 PM   | Scattering Techniques and Geometries (General) – Chris Tassone   |
| 12:15 – 12:30 PM   | Group Photo - <i>Participants and Organizers are to assemble in front of building 40</i>                   |
| 12:30 – 1:30 PM  | Lunch ( <i>1 hour</i> ) provided – <i>Picnic area between building 50 and 137</i>                          |
| 1:30 – 2:10 PM   | Detectors Zoology: What Are They and When to Use Which – Sven Herrmann                                     |
| 2:10 – 2:50 PM   | X-ray Diffraction – Structure Refinement Part 1 – Kevin Stone and Apurva Mehta                             |
| 2:50 – 3:00 PM   | <i>Break (10 minutes) Light Refreshments</i>   |
| 3:00 – 3:45 PM   | Epitaxial Thin Films and the Reciprocal Space.– Apurva Mehta   |
| 3:45 – 4:30 PM   | Polycrystalline Thin Films– Stefan Mannsfeld   |
| 4:30 – 5:30 PM   | Parallel Sessions Addressing Technical Aspects of Techniques   |
|  | Break-out 1 (Surfaces)<br>Sycamore Conference Room (195)   |
|  | Break-out 2 (Bulk & Structure)<br>Cypress Conference Room (147)  |
|  | Surface X-ray Scattering (Crystal Truncation Rods and X-ray Reflectivity – Kevin Stone and Apurva Mehta    |
|  | Structure Refinement II – Rietveld, total scattering, and resonant scattering – Badri Shyam and Yezhou Shi |

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| <b>Wednesday, 04 June 2014 Building 040, Sycamore Conference Room (195)</b>                             |   |   |   |  |  |
|---|---|---|---|--|--|
| 8:00 – 9:00 AM  | <i>Coffee and Light Refreshments</i>  |   |   |  |  |
| 9:00 – 9:45 AM  | SSRL Diffractometers and Scattering Geometries – Chad Miller  |   |   |  |  |
| 9:45 – 10:15 AM   | Small Angle X-ray Scattering (SAXS) – Chris Tassone   |   |   |  |  |
| 10:15 – 10:30 AM  | <i>Break (15 minutes)</i>   |   |   |  |  |
| 10:30 – 11:15 AM  | Data Collection Strategies – Apurva Mehta   |   |   |  |  |
| 11:15 – 12:00 PM  | Data Collection and Reduction Software – Stefan Mannsfeld   |   |   |  |  |
| 12:00 – 12:30 pm  | Experimental Chambers – Existing and New – Vanessa Pool   |   |   |  |  |
| 12:30 – 1:25 PM   | <i>Lunch (55 minutes) provided – Picnic area between building 50 and 137</i>  |   |   |  |  |
| 1:25 PM   | Participants are to meet escorts across the street from Gate 17 (BE PROMPT!)  |   |   |  |  |
| 1:30 – 5:00 PM  | <b>Beam Line Hands-on Practical Sessions – Building 120, SSRL Beam Lines</b>  |   |   |  |  |
|   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">                     Beam Line 1-5 – Small Angle X-ray Scattering (SAXS)<br/>                     Instructors: Chris Tassone and Victoria Savikhin                 </td> <td style="width: 50%; padding: 5px;">                     Beam Line 2-1 – X-ray Reflectivity<br/>                     Instructors: Apurva Mehta and Trevor Petach                 </td> </tr> <tr> <td style="padding: 5px;">                     Beam Line 7-2 – Polycrystalline Films<br/>                     Instructors: Alex Ayzner and Stefan Mannsfeld                 </td> <td style="padding: 5px;">                     Beam Line 11-3 – Transmission<br/>                     Instructors: Badri Shyam, Linda Lim                 </td> </tr> </table> | Beam Line 1-5 – Small Angle X-ray Scattering (SAXS)<br>Instructors: Chris Tassone and Victoria Savikhin | Beam Line 2-1 – X-ray Reflectivity<br>Instructors: Apurva Mehta and Trevor Petach | Beam Line 7-2 – Polycrystalline Films<br>Instructors: Alex Ayzner and Stefan Mannsfeld | Beam Line 11-3 – Transmission<br>Instructors: Badri Shyam, Linda Lim |
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| 3:00 – 3:15 PM  | <i>Break – Light Refreshments Building 120, Beam Line 9 Kitchen/Lounge</i>  |   |   |  |  |

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| <b>Thursday, 05 June 2014 Building 120, SSRL Beam Lines</b>   |  |   |   |   |  |
|---|--|---|---|---|--|
| 8:30 AM   | Participants are to meet escorts across the street from Gate 17 (BE PROMPT!)   |   |   |   |  |
| 8:45 – 9:00 AM  | <i>Coffee and Light Refreshments - Building 120, Beam Line 9 Kitchen/Lounge</i>  |   |   |   |  |
| 9:00 – 12:00 PM   | <b>Beam Line Hands-on Practical Sessions Part 2 – Building 120, SSRL Beam Lines</b>  |   |   |   |  |
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| 12:00 – 1:00 PM   | <i>Lunch (1 hour) provided – Picnic area between building 50 and 137</i>   |   |   |   |  |
| 1:00 – 3:15 PM  | <b>Data Analysis Methods – Part 1</b>  |   |   |   |  |
| Sycamore Conference Room  | Small Angle X-ray Scattering (SAXS) I (Simple, Non-experts) – Chris Tassone and Victoria Savikhin  |   |   |   |  |
| Cypress Conference Room   | Area Detector Analysis I – Stefan Mannsfeld and Chad Miller  |   |   |   |  |
| Whitney Conference Room   | Surface Scattering (crystal truncation rods) and X-ray Reflectivity – Kevin Stone and Yezhou Shi   |   |   |   |  |
| 3:15 – 3:30 PM  | <i>Break – Light Refreshments</i>  |   |   |   |  |
| 3:30 – 5:00 PM  | <b>Data Analysis Methods – Part 2</b>  |   |   |   |  |
| Sycamore Conference Room  | Small Angle X-ray Scattering (SAXS) II (Aimed at Experts) – Chris Tassone and Victoria Savikhin  |   |   |   |  |
| Cypress Conference Room   | Area Detector Analysis II – Stefan Mannsfeld and Chad Miller   |   |   |   |  |
| Whitney Conference Room   | What can you get from Peak Shapes, Profiles – Chuntian Cao and Kevin Stone   |   |   |   |  |