



**2<sup>ND</sup> THERMAL PROBE WORKSHOP**  
ZURICH, 15<sup>th</sup> – 16<sup>th</sup> January 2015

## Workshop program



[www.swisslitho.com](http://www.swisslitho.com)



[www.zurich.ibm.com](http://www.zurich.ibm.com)

**Thursday, 15th January 2015**

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| <b>08.30 – 14.00</b> | <b>Registration</b> | <i>in front of conference room „Pascal“</i> |
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| <b>09.00 – 10.30</b> | <b>PPA-Litho project meeting</b><br><i>(Eurostars project only)</i><br><i>Conference room „Pascal“</i> | <b>NanoFrazor User meeting</b><br><i>(SwissLitho customers only)</i><br><i>SwissLitho Lab</i> | <b>Cantilever fabrication</b><br><i>(Cantilever project only)</i><br><i>Technopark meeting room B</i> |
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**Special interest groups**

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| <b>10.30 – 12.30</b> | <b>Group I. Resist materials</b><br>Moderation: Dr. Heiko Wolf, IBM Research<br><i>Short presentations:</i><br>Dr. Matthias Schirmer, Allresist GmbH<br>Dr. Stefan Köstler, Joanneum Research<br><i>Conference room „Pascal“</i> | <b>Group II. Heat conduction at the nanoscale</b><br>Moderation: Dr. Fabian Menges, IBM Research<br><i>SwissLitho Lab</i> |
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| <b>12.30 – 14.00</b> | <b>Lunch</b> | <i>Technopark Cafeteria (reserved tables)</i> |
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| <b>14.00 – 15.45</b> | <b>Session I</b>   | <i>Conference room „Pascal“</i> | Chair: Dr. Urs Dürig, IBM Research |
| 14.00 – 14.15        | <b>Welcome</b><br>Dr. Felix Holzner, Dr. Armin Knoll   |                                 |                                    |
| 14.15 – 14.45        | <b>The Genesis of thermal AFM probes</b><br>Dr. Daniel Rugar, IBM Research Almaden   |                                 |                                    |
| 14.45 – 15.05        | <b>Fabrication of thermal probes</b><br>Dr. Michel Despont, CSEM Neuchatel   |                                 |                                    |
| 15.05 – 15.25        | <b>Sub 20 nm silicon patterning and metal lift-off using thermal Scanning Probe Lithography</b><br>Dr. Heiko Wolf, IBM Research Zurich |                                 |                                    |
| 15.25 – 15.45        | <b>Overlay to nano-scaled objects buried under spin-coated films</b><br>Dr. Colin Rawlings, IBM Research Zurich                        |                                 |                                    |
| 15.45 – 16.10        | Break, coffee & snacks   |                                 |                                    |

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| <b>16.10 – 17.20</b> | <b>Session II</b>  | <i>Conference room „Pascal“</i> | Chair: Dr. Armin Knoll, IBM Research |
| 16.10 – 16.40        | <b>Oxidation Scanning Probe Lithography: Basics, applications and outlook</b><br>Prof. Ricardo Garcia, Instituto Ciencia de Materiales de Madrid, CSIC |                                 |                                      |
| 16.40 – 17.00        | <b>Molecular glass resists for thermal Scanning Probe Lithography</b><br>Dr. Christian Neuber, University of Bayreuth                                  |                                 |                                      |
| 17.00 – 17.20        | <b>Chemical patterning for the controlled assembly of charged nanoparticles</b><br>Dr. Keith Carrol, IBM Research Zurich                               |                                 |                                      |
| 17.20 – 17.40        | Break, coffee & snacks   |                                 |                                      |

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| <b>17:45 – 18.45</b> | <b>Session III</b>   | <i>Conference room „Pascal“</i> | Chair: Dr. Felix Holzner, SwissLitho |
| 17.45 – 18.15        | <b>Surface patterning by Dip-Pen Nanolithography</b><br>Prof. Harald Fuchs, University of Münster                  |                                 |                                      |
| 18.15 – 18.45        | <b>Fast and accurate e-beam writing on large areas</b><br>Prof. Bernhard Kley, University of Jena & Fraunhofer IOF |                                 |                                      |

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| <b>19.00</b> | <b>Apéro tram and fondue dinner</b> | <i>(Tram leaves at 19.15 at station “Technopark”)</i> |
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## Friday, 16th January 2015

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| 08.30 – 09.00        | Registration, Coffee & Snacks   |
| <b>09.00 – 09.50</b> | <b>Session IV</b> <span style="float: right;"><i>Conference room „Pascal“</i></span> <span style="float: right;">Chair: Dr. Michel Despont, CSEM</span> |
| 09.00 – 09.30        | <b>Thermochemical Scanning Probe Lithography</b><br>Prof. Elisa Riedo, Georgia Tech   |
| 09.30 – 09.50        | <b>Scanning Probe Thermometry - Measuring temperature on the nanoscale</b><br>Dr. Fabian Menges, IBM Research Zurich                                    |
| 09.50 – 10.10        | Break, coffee & snacks  |

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| <b>10.10 – 11.10</b> | <b>Session V</b> <span style="float: right;"><i>Conference room „Pascal“</i></span> <span style="float: right;">Chair: Dr. Philip Paul, SwissLitho</span>     |
| 10.10 – 10.30        | <b>Gray-scale Lithography and fabrication of blazed-grating silicon-on-insulator optical input/output couplers</b><br>Dr. Matthieu Nannini, McGill University |
| 10.30 – 10.50        | <b>Electrical transport in dielectric-coated carbon nanotube probes</b><br>Dr. Yuliya Lisunova, EPFL  |
| 10.50 – 11.10        | <b>Nanopatterning of graphene using the SwissLitho NanoFrazor</b><br>Dr. Alberto Cagliani, DTU Nanotech   |
| 11.10 – 11.30        | Break, coffee & snacks  |

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| <b>11.30 – 12.40</b> | <b>Session VI</b> <span style="float: right;"><i>Conference room „Pascal“</i></span> <span style="float: right;">Chair: Prof. Jürgen Brugger, EPFL</span> |
| 11.30 – 12.00        | <b>Scanning Probe Lithography for quantum technology</b><br>Prof. Klaus Ensslin, ETH Zurich   |
| 12.00 – 12.30        | <b>Single atom manipulation at room temperature</b><br>Prof. Ernst Meyer, University of Basel   |
| 12.30 – 12.40        | <b>Closing remarks</b><br>Dr. Felix Holzner, Dr. Armin Knoll  |

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| <b>12.40 – 14.00</b> | <b>Lunch</b> <span style="float: right;"><i>Technopark Cafeteria (reserved tables)</i></span> |
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| Special interest groups |  |
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| <b>14.00 – 16.00</b>    | <b>Group III. Applications and impact of thermal probes</b><br>Moderation: Dr. Roger Lagadec, Genilem<br><i>Conference room „Pascal“</i> |

**LOCATION** Technopark Zurich  
Technoparkstrasse 1  
CH-8005 Zürich  
Switzerland

**Conference Room „Pascal“, 3<sup>rd</sup> floor Darwin-Wing**

### CONTACTS

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