

NanoScale 2019

Programme

Monday, 2019-10-14

Arrival		
16:40 – 18:00		Lab Tours to TU-BS LENA & PTB

Tuesday, 2019-10-15

Registration		
From 10:00		Registration & preparation of poster walls & coffee
NanoScale 2019		
11:20		Welcome
1 st Session – Instrumentation		
11:30	1.1	<p>Bringing Real-time Traceability to High-Speed Atomic Force Microscopy</p> <p>1) A Yacoot, E Heaps, H Dongmo, 2) O Payton, F Russell-Pavier, 3) L Picco, 4) P Klapetek</p> <p>1) National Physical Laboratory, Teddington Middlesex, TW11 0LW, UK 2) University of Bristol, Tyndall Avenue Bristol, BS8 1TL, UK 3) Department of Physics, Virginia Commonwealth University, Richmond, 23284 VA, USA 4) Czech Metrology Institute, Okružní 31, 638 00, Brno, Czech Republic</p>
11:50	1.2	<p>Large range atomic force microscope operated in tapping-mode</p> <p>J Schaude, M Fimushkin, A Gröschl, U Klöpzig, T Hausotte</p> <p>Friedrich-Alexander-University Erlangen-Nuremberg (FAU), Erlangen, Germany</p>
12:10	1.3	<p>Metrological investigation of the performance of self sensing AFM cantilevers</p> <p>1) T Gotszalk, M Rudek, 2) A Yacoot, 3) M Holz, 4) I W Rangelow</p> <p>1) Wroclaw University of Technology, Wroclaw, Poland 2) National Physical Laboratory, Hampton Road, Teddington, TW11 0LW, United Kingdom 3) Nano Analytik GmbH, Ehrenbergstr. 1, 98693 Ilmenau, Germany 4) Institute for Micro- and Nanoelectronics, TU Ilmenau, 98693 Ilmenau, Germany</p>
12:30		Lunch

Keynote speech		
13:20	1.4	<p>A standard used for probe-tip diameter evaluation in surface roughness measurements using a metrological atomic force microscope (Invited)</p> <p>I Misumi, R Kizu, K Sugawara, A Hirai and S Gonda</p> <p>National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan</p>
2nd Session (I)- 3D Nano		
13:50	2.1	<p>Traceable 3D nanometrology</p> <p>1) V Korpelainen, 2) M Valtr, 3) G Zeng, 4) A Yacoot, E Heaps, 5) G Dai, U Kuetgens, 6) N Sebaihi, 7) R Koops, 8) T Hausotte, Yiting Wu, 9) F Meli, 10) H Spruit, E van Zeijl, 11) G B Picotto, 12) G Papageorgiou, V Constantoudis, P Dimitrakis</p> <p>1) VTT, Finland 2) CMI, Czech Republic 3) DFM, Denmark 4) NPL, United Kingdom 5) PTB, Germany 6) SMD, Belgium 7) VSL, Netherlands 8) FAU, Germany 9) METAS, Switzerland 10) TNO, Netherlands 11) INRIM, Italy 12) NCSR Demokritos, Greece</p>
14:10	2.2	<p>Progress on the development of reference standards for 3D nanometrology</p> <p>1) R Koops, 2) V Korpelainen, 3) M Valtr, 4) G Zeng, 5) A Yacoot, E Heaps, 6) G Dai, 7) N Sebaihi, 8) T Hausotte, Yiting Wu, 9) G Papageorgiou, P Dimitrakis, 10) H Spruit, E van Zeijl, 11) G B Picotto, 12) F Meli</p> <p>1) VSL, The Netherlands 2) VTT, Finland 3) CMI, Czech Republic 4) DFM, Denmark 5) NPL, United Kingdom 6) PTB, Germany 7) SMD, Belgium 8) FAU, Germany 9) NCSR Demokritos, Greece 10) TNO, Netherlands 11) INRIM, Italy 12) METAS, Switzerland</p>

14:30	2.3	<p>Sub-nm accurate tip form characterization in critical dimension atomic force microscopy</p> <p>1) Gaoliang Dai, Kai Hahm, 2) Linyan Xu</p> <p>1) Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany 2) Precision Measuring Technology & Instrument, Tianjin University, Tianjin 300072, P.R. China</p>
14:50		Coffee & Poster
2nd Session (II) – 3D Nano		
15:10	2.4	<p>Exploring limits of elastic probe-sample deformation in Scanning Probe Microscopy</p> <p>1) P Klapetek, M Valtr, A Charvátová Campbell, 2) A Yacoot, D Cox, 3) D Nečas</p> <p>1) Czech Metrology Institute, Okruzni 31, 638 00 Brno, Czech Republic 2) National Physical Laboratory, Hampton Rd, Teddington TW11 0LW, United Kingdom 3) CEITEC MU, Czech Republic, Purkynova 123, 616 00 Brno</p>
15:30	2.5	<p>Measuring the spatial complexity of nanostructured surfaces</p> <p>1) V Constantoudis, M Chatzigeorgiou, A Arapis, E Gogolides, 2) D Kontziambasis</p> <p>1) Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Agia Paraskevi, Greece 2) Faculty of Biological Sciences, University of Leeds, Leeds LS2 9JT, UK</p>
15:50		Coffee & Poster
	P1	1. Poster session
3rd Session – Standards		
17:30	3.1	<p>Amphitheatre atomic steps for improved calibration of AFM microscopes</p> <p>1) J Garnaes, L Nielsen, M H Madsen, A Torras-Rosell, 2) A Yacoot, 3) O Lenck, I Busch, L Koenders</p> <p>1) Danish Fundamental Metrology, Kogle Allé 5, DK - 2970 Hørsholm, Denmark 2) National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK 3) Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany</p>
17:50	3.2	<p>A natural square ruler at nanoscale</p> <p>Xiao Deng, Li Zhu, Xinpan Wang, Yanni Cai, Xinbin Cheng and Tongbao Li</p> <p>Tongji University, 1239 Siping Rd, 200092, Shanghai, People's Republic of China</p>

NanoScale 2019
2019-10-14

18:10	3.3	Transfer standards for 3D nano-metrology 1)2) I Kassamakov, 2) T Viitala, 1) M Järvinen, 1) T Vainikka, 1) A Nolvi, 3) C Bermúdez, 3) R Artigas, 3) P Martinez, 4) V Korpelainen, 4) V Heikkinen, 4) A Lassila, 1) K Ahlers, 1) Edward Hæggström 1) Nanojet Inc., Pursimiehenkatu 26 C, 00150, Helsinki, Finland 2) University of Helsinki, Fabianinkatu 33, 00014, Helsinki, Finland 3) Sensofar Tech SL, Parc Audiovisual de Cat. Ctra BV-1274 Km 1, 08225 Terrassa, Barcelona, Spain 4) VTT MIKES, Tekniikantie 1, Espoo, Finland
18:30	END	
18:45		Bus transfer to the conference dinner
19:30		Official Reception of the City of Braunschweig - Conference Dinner

Wednesday, 2019-10-16

From 8:30		Registration
4th Session (I) – Methods & Calibration		
9:00	4.1	<p>Inter-laboratory comparison for advanced material characterization in Thailand</p> <p>1) Bralee Chayasombat, Visittapong Yordsri, Chanchana Thanachayanont 2) Annop Klamchuen, Suwimon Boonrungsiman, Taksadon Wutikhun, Panita Kasamechonchung, 3) Jariya Buajarern</p> <p>1) National Metal & Materials Technology Center (MTEC), Nat. Sc. & Tec. Dev. Agency (NSTDA) 2) National Nanotechnology Center (NANOTEC), Nat. Sc. & Tec. Dev. Agency (NSTDA), Thailand 3) National Institute of Metrology Thailand (NIMT), Thailand</p>
9:20	4.2	<p>Investigating single photon emitters with time-resolved scanning tunneling microscopy</p> <p>Markus Etzkorn 1)2), Mike Stummvoll 1), Anna Rosławska 2), Pablo Merino 2), Christoph Große 2) Christopher C Leon 2), Olle Gunnarsson 2), Klaus Kuhnke 2), Klaus Kern 2), Uta Schlickum 1,2)</p> <p>1) Institut für Angewandte Physik, TU Braunschweig, Mendessohnstr. 2, 38106 Braunschweig 2) Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, 70569 Stuttgart</p>
9:40		Coffee & Poster
4th Session (II) – Methods & Calibration		
10:00	4.3	<p>Reconstruction of sub-lambda structures with an improved optimization method for depolarizing Mueller-matrices</p> <p>1) Tobias Grunewald, Matthias Wurm, Sven Teichert, Bernd Bodermann 2) Johanna Reck, Uwe Richter</p> <p>1) Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany 2) SENTECH Instruments GmbH, Schwarzschildstraße 2, 12489 Berlin, Germany</p>
10:20	4.4	<p>MEMS reference for atomic force microscope calibration</p> <p>1) M Babij, W Majstrzyk, T Piasecki, T Gotszalk, 2) A Sierakowski, R Dobrowolski, 3) A Yacoot</p> <p>1) Wroclaw University of Technology, Wroclaw, Poland 2) Institute of Electron Technology, Al. Lotników 32/46, 02-668 Warszawa, Poland 3) National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, United Kingdom</p>
10:40	P2	2. Poster session
12:00		Lunch

5th Session(I) – Calibration		
13:00	5.1	<p>20 picometer order step displacement measurements using heterodyne interferometer with simple phase-locked loop phasemeter</p> <p>1) Masato AKETAGAWA, Thanh Dong NGUYEN, Masato HIGUCHI, Dong WEI 2) Thanh Tung VU</p> <p>1) Department of Mechanical Engineering, Nagaoka University of Technology, Niigata, Japan 2) School of Mechanical Engineering, Hanoi University of Science and Technology, Hanoi, Vietnam</p>
13:20	5.2	<p>Nonlinear effects in displacement measurements by capacitive sensors</p> <p>Lars Daul, Ingo Busch, Sebastian Bütetfisch, Thorsten Dziomba, Ludger Koenders, Rudolf Meeß, Helmut Wolff</p> <p>Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany</p>
13:40		Coffee
5th Session (II)– Calibration		
14:00	5.3	<p>A substitution method for capacitance calibration using scanning microwave microscopy</p> <p>J A Morán-Meza, A Delvallée, D Allal, F Piquemal</p> <p>Laboratoire National de métrologie et d'Essais (LNE), 78197 Trappes Cedex, France</p>
14:20	5.4	<p>Calibration Standards for Quantitative Magnetic Force Microscopy</p> <p>1) M Havlicek, 1,2) P Klapetek, 3) D Nečas</p> <p>1) Brno University of Technology, CEITEC - Central European Institute of Techn. Brno, Czech Republic 2) Czech Metrology Institute, Okružní 31, 63800 Brno, Czech Republic 3) Plasma Technologies, CEITEC, Masaryk University, Brno, 62500, Czech Republic</p>
14:40	5.5	<p>Local geometrical error corrections for a metrological scanning probe microscope</p> <p>B Babic, V A Coleman and J Herrmann</p> <p>Nanometrology Section, National Measurement Institute Australia, Lindfield, NSW 2070, Australia.</p>
15:00	END	Summary and end of the NanoScale 2019
15:15		Coffee
15:30		Lab Tours