NanoScale 2016, Wroclaw, March 9th to March 11th, 2016

Programme

Wednesday, March 9th, 2016

Arrival		
14:30		**Lab Tours**

Thursday, March 10th, 2016

8:00		**Registration**
9:00		**Welcome**
	1st Session	
9:10	**1.1**	**A new certified reference material to assure SI-traceable size measurement results of nanoparticles** V. Kestens, G. Roebben European Commission, Joint Research Centre (JRC), Institute for Reference Materials and Measurements (IRMM), Retieseweg 111, 2440 Geel, Belgium
9:30	**1.2**	**Polystyrene nanoparticle deformation study with AFM** A. Nicolet and F. Meli Swiss Federal Institute of Metrology METAS, Lindenweg 50, CH-3003 Bern-Wabern, Switzerland
9:50	**1.3**	**Metrological characterisation of biological microparticles by atomic force microscopy** N. Sebaihi, B. De Boeck, J. Pétry 1) R. Koops, V. Fokkema 2) Y. Yuana, R. Nieuwland 3) 1) Belgian National Metrology Institute (SMD), Boulevard du Roi Albert II 16, 1000 Brussels, Belgium 2) Dutch Metrology Institute (VSL), 2629-JA Delft, The Netherlands 3) Academic Medical Centre (AMC), Meibergdreef 9,1105 AZ Amsterdam, The Netherlands
10:10	**1.4**	**An image analysis technique: Quantitative measurement of pore size and its distribution of mullite membranes** W. Singhapong 1), P. Srinopakun 2), A. Jaroenworaluck 3) 1) Interdisciplinary Graduate Program in Advanced and Sustainable Environmental Engineering (TAIST-Tokyo Tech), Faculty of Engineering, Kasetsart University, Bangkok 10900, Thailand 2) Faculty of Engineering, Kasetsart University, Bangkok 10900, Thailand 3) National Metal and Materials Technology center, National Science and Technology Development Agency, 114 Thailand Science Park, Phahonyothin Road, Khlong Nueng, Khlong Luang, Pathum Thani 12120, Thailand
10:30		Coffee & Poster

11:00	**1.5**	**Modeling of a metrological AFM interferometric position measurement system to determine its measurement uncertainty** P. Ceria, S. Ducourtieux, Y. Boukellal, A. Allard, N. Fischer, N. Feltin Laboratoire National de metrologie et d'Essais (LNE), 29 Rue Roger Hennequin, 78197 TRAPPES Cedex, France
11:20	**1.6**	**Virtual standards for AFM calibration** Richard Koops, Marijn van Veghel, Arthur van de Nes VSL Dutch Metrology Institute, Thijsseweg 11, 2629 JA Delft, The Netherlands
11:40	**1.7**	**A method for estimating and reducing Abbé off-sets in the metrological scanning probe microscope at the National Measurement Institute Australia** B.Babic, C. Freund, V.A. Coleman and J. Herrmann Nanometrology Section, National Measurement Institute, Lindfield, NSW 2070, Australia.
12:00		Lunch
		2nd Session
13:00	**2.1**	**Creation of defined roughness on curved surfaces with Focused Ion Beam (FIB) for the evaluation of various surface measurement techniques** T. Dziomba, A. Felgner, H.-U. Danzebrink , L. Koenders, R. Meeß, U. Neuschaefer-Rube 1) M. Hemmleb 2) 1) Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany 2) m2c calibration, Alt Nowawes 83a, 14482 Potsdam, Germany
13:20	**2.2**	**Gwyscan: a library to support non-equidistant Scanning Probe Microscope measurements** P. Klapetek 1), P. Grolich 1), D. Nečas 2), A. Yacoot 3) 1) Czech Metrology Instute, Okružní 31, 638 00 Brno, Czech Republic 2) Central European Institute of Technology, Žerotínovo nám. 617/9, 601 77 Brno, Czech Republic 3) National Physical Laboratory, Hampton Road, Teddington, TW11 0LW, United Kingdom
13:40	**2.3**	**Establishing Traceability in Kelvin Probe Measurements for Photocatalytic Surface at the Nanometer Scale** Antoni Torras-Rosell 1) , Kai Dirscherl 1), Svava Davidsdottir 2) 1) DFM A/S, Matematiktorvet 307, Kgs. Lyngby, DK-2800, Denmark. 2) Department of Mechanical Engineering, Technical University of Denmark (DTU), Building 425, Kgs. Lyngby, DK-2800, Denmark.
14:00	**2.4**	**SI-traceable determination of the spring constant of a soft cantilever using a nanonewton force facility based on electrostatic methods** V.Nesterov, D.Nies, S.Buetefisch, M.Mueller, T.Ahbe, D.Naparty, R.Popadic, H.Wolff 1) O.Belai 2) 1) Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany 2)Institute of Automation and Electrometry (IA&E), Koptjug Avenue 1, 630090 Novosibirsk, Russia
14:20		Coffee & Poster

15:10	**2.5**	**Measurement Comparison of Linewidth on Photomask by NIST and PTB** D. Bergmann 1), B. Bodermann 1), H. Bosse 1), E. Buhr 1), G. Dai 1), R. Dixson 2), W. Häßler-Grohne 1), K. Hahm 1), M. Wurm 1) 1) Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany 2) National Institute of Standards and Technology (NIST), Gaithersburg, USA
15:30	**2.6**	**Progress in developing reference nanodimensional metrology using AFM, SEM and TEM** Gaoliang Dai, Wolfgang Häßler-Grohne, Jens Fluegge, Harald Bosse 1) Markus Heidelmann 2) 1) Physikalisch-Technische Bundesanstalt, 38116 Braunschweig, Germany 2) ICAN - Interdisciplinary Center for Analytics on the Nanoscale, University of Duisburg-Essen, Carl-Benz-Straße 199, 47057 Duisburg
15:50	**2.7**	**Characterisation and validation of scatterometry reference standards** B. Bodermann, E. Agocs, J. Endres, A. Fernandez Herrero, M. Krumrey, F. Scholze, V. Soltwisch, M. Wurm 1) S. Burger 2) P.-E. Hansen, L. Nielsen, M. H. Madsen 3) B. Loechel, J. Probst 4) 1) Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany 2) JCMwave GmbH, Bolivarallee 22, 14050 Berlin, Germany 3) Dansk Fundamental Metrologi (DFM), Matematiktorvet 307, DK- 800 Kongens Lyngby, Denmark, 4) Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB), Albert-Einstein-Str. 15, 12489 Berlin, Germany
16:10		Coffee & Poster
		3rd Session EMRP Crystal
16:40	**3.1**	**Production of atomic step height standards for the calibration of atomic force microscopes (AFM) based on Si(111)7x7** O. Lenck, F. Pohlenz, T. Dziomba, S. Bütefisch, M. Weinert, P. Barlen, I. Busch, T. Weimann and L. Koenders Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany
17:00	**3.2**	**Measurements and image analysis of atomic steps for calibration and improved correction of AFM measurement** J. Garnaes 1), M. H. Madsen 1), A. Torras-Rosell 1), A. Yacoot 2), M Lazzerini 2), V. Korpelainen 3), O. Lenck 4), I. Busch 4), L. Koenders 4), P. Klapetek 5), M. Valtr 5), P. Jelinek 6), D. Necas 7) 1) Danish Fundamental Metrology, Matematiktorvet 307, DK-2800 Kgs. Lyngby, Denmark 2) National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK, UK 3) VTT Technical Research Centre of Finland Ltd, Centre for Metrology MIKES, P.O. Box 1000, FI-02044 VTT, Finland 4) Physikalisch-Technische Bundesanstalt Bundesallee 100, 38116 Braunschweig, Germany 5) Cesky Metrologicky Institut Brno, Okružní 772/31, 638 00 Brno, Czech Republic 6) Institute of Physics of the Czech Academy of Sciences, Na Slovance 1999/2, 182 00 Praha, Czech Republic 7) CEITEC Masaryk University, Zerotinovo nám., 617/9, 601 77 Brno, Czech Republic

17:20	**3.3**	**DNA nano-origami structures as calibration standards for nanometrology** V. Korpelainen, J. Seppä, A. Lassila 1) V. Linko, M. Kostiainen 2) 1) VTT Technical Research Centre of Finland Ltd, Centre for Metrology MIKES, P.O. Box 1000, FI-02044 VTT, Finland 2) Biohybrid Materials, Department of Biotechnology and Chemical Technology, Aalto University, FI-00076 Aalto, Finland
17:40	**3.4**	**Towards Lateral Length Standards at the Nanoscale Based on Diblock Copolymers** G. Aprile, F. Ferrarese Lupi, E. Enrico, N. De Leo, L. Boarino 1) F. Volpe, G. Seguini, M. Perego 2) K. Sparnacci, M. Laus 3) J. Garnæs 4) 1) Nanofacility Piemonte, Nanoscience and Materials Divisio, Istituto Nazionale di Ricerca Metrologica (INRIM), Strada delle Cacce 91, Torino (TO) 10135, Italy 2) Laboratorio MDM, IMM-CNR, Via C. Olivetti 2, Agrate Brianza (MB) 20846, Italy 3) Dipartimento di Scienze e Innovazione Tecnologica (DIST), Viale T. Michel 11, Università del Piemonte Orientale "A. Avogadro", INSTM, Alessandria (AL) 15121, Italy 4) Danish Fundamental Metrology, 307 Matematiktorvet, DK-2800 Kgs. Lyngby, Denmark
18:00	**END**	
20:00		**Conference Dinner**

Friday, March 11th, 2016

8:00		Registration
		4th Session
9:00	**4.1**	**Sub-nanometre length metrology** Birk Andreas, Kathrin Friedrich, Ulrich Kuetgens, Susanne Quabis, Christoph Weichert 1) Andrew Yacoot, Herve Dongmo 2) Dirk Voigt, Arthur S. van de Nes, Steven A. van den Berg 3) Mehmet Çelik, Ramiz Hamid, Arif Demir 4) Stoyan Nihtianov, Roumen Nojdelov 5) 1) Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany 2) National Physical Laboratory, Hampton Road, Teddington, Middlesex TW11 0LW, UK 3) VSL,Thijsseweg 11, P.O. Box 654, NL-2629 JA Delft, Netherlands, 4) TÜBİTAK Gebze Yerleşkesi Barış Mah. Dr.Zeki Acar Cad. No:1, 41470 Gebze / KOCAELİ, Turkey 5) TU Delft, Mekelweg 4, 2628 CD Delft, Netherlands
9:20	**4.2**	**Simultaneous multi degree of freedom (DoF) measurement system** G. Molnar, S. Strube, J. Flügge, H.-U. Danzebrink Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany
9:40	**4.3**	**Coordinate interferometric measuring system for positioning of a sample in electron-beam writer** J. Lazar, M. Holá, J. Hrabina, J. Oulehla, O. Číp 1) M. Valtr, P. Klapete 2)k 1) Institute of Scientific Instruments of the CAS, v. v. i. Královopolská 147, 612 64 Brno, Czech Republic 2)Czech Metrology Institute, Brno, Okružní 31, 638 00 Brno, Czech Republic

10:00		Coffee & Poster 1 ¼ h
		5th Session NanoHeat
11:20	**5.1**	**Technology of integrated piezoresistive NANOHEAT thermal probes** Paweł Janus ITE Warsaw, Poland
11:40	**5.2**	**Thermomechanical modeling and control of NANOHEAT probes** Michel Lenczner, FEMTO, Besancon, France
12:00		Lunch
13:00	**5.3**	**Temperature mapping by scanning probe thermometry** Fabian Menges, IBM Rueschlikon, Switzerland
13:20	**5.4**	**Nanometrology using NANOHEAT platform** Teodor Gotszalk WRUT, Wroclaw, Poland
13:40	**5.5**	**NanoHeat fast scanning stages and integration with the NANOHEAT platform** Mathias Holz TU-Ilmenau; Ilmenau, Germany
14:00		
14:30		**Lab Tours**