

## Room 5

### Session 2-5-1: OS15 Nano-scale measurements and calibrations I

OS15-02 An Optical Angle Measurement Based on Dual Comb Spectroscopy  
Sota Iguchi, Hiraku Matsukuma, Kakeru Ikeda, Ryo Sato and Wei Gao

OS15-03 Calibration Method for Optical Angle Measurements using Diffraction Gratings  
Hiraku Matsukuma, Sota Iguchi, Kakeru Ikeda, Ryo Sato and Wei Gao

OS15-07 Understanding the Interplay between Hardness and Yield Stress in Fused Silica  
Asit Kumar Gain, Liangchi Zhang and Zhen Li

OS15-08 A non-orthogonal Lloyd's mirror interferometer with a spatial light modulator for arbitrary pattern fabrication  
Nozomu Takahiro and Yuki Shimizu

### Session 2-5-2: OS15 Nano-scale measurements and calibrations II

OS15-09 Sensitivity improvement of an optical head for measurement of the pitch deviation of a diffraction grating based on angles of diffraction of diffracted laser beams  
Tomoki Kitazume, Yuya Yamazaki and Yuki Shimizu

OS15-10 Development of a modified optical head for measurement of the pitch deviation of a diffraction grating having a pitch narrower than laser wavelength  
Yuya Yamazaki, Tomoki Kitazume and Yuki Shimizu

OS15-11 Expansion of measuring range of optical angle sensor with light source having multiple longitudinal modes  
Keita Nakaoka and Yuki Shimizu

OS15-13 Roundness Metrology of Small Cylinders with a Developed Non-contact Precision Two-dimensional Coordinate Measuring Device, Qiaolin Li, Chuang Zeng, Borong Wu, Xiaohao Wang and Xinghui Li

### Session 2-5-3: OS15 Nano-scale measurements and calibrations III

OS15-14 Sub-micrometer scale pulsed laser ablation in water and nanofluids medium using position controlled photonic nanojet  
Reza Aulia Rahman, Tsutomu Uenohara, Yasuhiro Mizutani and Yasuhiro Takaya

OS15-28 Ultra-precision and Highly Uniform One-Dimensional Nano-grating Standard By 50 nm Pitch For Nanoscale Calibration  
Yaxin Zhang, S. Wang, F. Han, Y. Zhao, K. Zheng, C. Wang, W. Jing, N. Peng and Z. Jiang

OS15-16 Absolute Grating Encoder with Nano-level Precision on Meter-level Measurement Range  
Shengtong Wang, Feifan Cao, Linbin Luo, Yifeng Wang and Xinghui Li

OS15-17 Form deviation measurement of probe tip ball for CMM using a rotatable ring gauge  
Tatsuki Tsuda, So Ito, Kimihisa Matsumoto and Kazuhide Kamiya

OS15-18 Stitching interferometry method for self-calibration of large-scale variable-line-spacing gratings by using a Fizeau interferometer  
Chenguang Yin, Xin Xiong, Ryo Sato, Hiraku Matsukuma and Wei Gao