RIKEN Symposium
The 2nd Advanced Optical Fabrication for Analyzer Technologies (ADOPTECH2021)
Date: 14:10-17:20, March 19, 2021

Innovated optical technologies have been established through applying advanced fabrication technologies with computer aided engineering and also research networks creating advanced optical elements such as X-ray mirrors, neutron lenses/ mirrors, infrared grating, large space telescope lenses for cosmic ray observatory, laser optics, etc. at Materials Fabrication Laboratory (MFL), RIKEN with many collaborators. Furthermore, advanced analyzers with "exclusive specifications" have been developed through applications of such advanced optics: one of the representative examples is development of cosmic ray analyzer "Mini-EUSO telescope" which has been launched for ISS (International Space Station) in August 2019. Mini-EUSO telescope employed Fresnel lenses which have been precisely fabricated by ultraprecision diamond turning with nanoprecision machine tools and with additional polishing. Another example is development of a portable elemental analyzer which employs a X-ray mirror produced by ELID-grinding and CMP.

This symposium has been founded to provide an opportunity discussing on research and development related to novel optical fabrication technologies and on development of prototype analyzers by employment of the produced advanced optics. This time, this symposium has been expanded to provide the latest topics on new optical fabrication, clean machining towards medical fabrication, and AI machining system integration. Especially, AI machining system integration has just been launched for evolution towards the next generation grinding and machining technologies. Productive discussion and exchange of information on each research topics are expected through this symposium.

Time	Program
14:10-14:40	Manufacturing Plastic Lenses on a Fanuc Robonano Ultraprecision Lathe Nathan Hagen, Utsunomiya University
14:40-15:10	Experimental Investigation for Optimizing the Fabrication of a Sapphire Capillary Using Femtosecond Laser Machining and Diamond Tool Micromilling Kazutoshi Katahira, RIKEN
15:10-15:20	Break
15:20-15:45	Mirror Surface Grinding of Lancet Needles Applying Metal-resin Bonded Diamond Wheel Containing Nano Diamond and Water Ion-shot Dressing System Teruko Kato, RIKEN
15:45-16:10	The Water Machining System (The Electric Rust Preventive Machining System) -International Implementation - Naohiro Nishikawa, Iwate University/RIKEN
16:10-16:20	Summary, Hitoshi Ohmori, RIKEN
16:20-17:20	Ultra/nanoprecision machining facility tours

Presentations will be done in English.

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