Guest Editorial

“Advances in Scanning Probe Microscopies for Nanomaterial Analyses —From Basic Science to Quantitative Nanofunctionality Analyses—”

More than a quarter of a century has passed since the invention of the scanning probe microscope (SPM). Today, SPM is being applied to a wide range of research fields and materials. Compared with other nanoscale microscopies, SPM has a superior analytical capability of a wide range of physical quantities and features. SPMs are being used not only as basic research tools, but also as inspection tools that are indispensable for industries. For example, SPMs have firmed their status as quantitative characterization tools at the nanoscale, which are indispensable for developing and inspecting electronic devices. As the popularization of SPM develops, the establishment and standardization of quantitative-analysis methods for reliable and reproducible characterization of nanoscale properties obtained by SPM are strongly demanded. Moreover, the importance of theoretical research and computational science has significantly increased, since they can clarify the interactions between probes and surfaces at the nanoscale, giving correct interpretations of data.

From such a background, the editorial committee of *Analytical Sciences* has become determined to publish a special issue on the advances in SPM for nanomaterial analyses. It consists of reviews and original papers related to the recent development of SPM nanocharacterization methods, such as metrology and quantitative analyses, simulation and modeling based on computational science, and international standardization. I hope that readers of *Analytical Sciences* may find the selected topics of interest, and new aspects and ideas on novel SPM analyses will be generated from this special issue.

I appreciate the authors and the referees for their kind cooperation with this special issue. Finally, I would like to express my sincere gratitude to Ms. Ayako Takashima for her excellent efforts concerning various editorial supports to realize this publication.

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