Best Solutions for Supporting Fabrication of Cutting-edge Semiconductor Devices

Wasuke Nakano
Vice President and Executive Officer
General Manager
Semiconductor Equipment Business Group
Hitachi High-Technologies Corporation

IN addition to consumer needs, including those regarding the latest digital home appliances, mobile phones, and car electronic products, the global IT demand (a large part of which is being driven by China) is growing, and continual growth of semiconductors is being expected. Realizing this growth scenario, however, necessitates the development of conventional technology that responds to changes in fabrication technologies and new device configurations in the nanometer range. In particular, as the transistor approaches its physical limit, the topics gaining most attention are microfabrication, inspection, and analysis systems that take advantage of development of new materials and nanotechnologies.

Against this background, in the present issue, first, a future picture of next-generation semiconductor devices, and the technologies for fabricating them, is painted. After that, aimed at realizing this future, Hitachi's semiconductor-fabrication and inspection systems—developed by making full use of its cutting-edge technologies—are introduced.

In particular, Hitachi High-Technologies Corporation is proposing a new method—called "Smart Root Cause Analysis"—that detects, evaluates, and analyzes defects at the nano-level and rationally investigates the cause of the defects. In doing so, this method will contribute to improving fabrication processes and materials and attaining the highest quality and production yields.

As activities concerning company reorganization, alliances, consortia, etc. gather pace, Hitachi Group is proposing new technologies and systems that will preempt these next-generation semiconductor device fabrication technologies.

From now onwards as well, we will vigorously work toward timely provision of Hitachi's best solutions—utilizing fabrication, inspection, and analysis systems taking advantage of cutting-edge nanotechnologies—for meeting the needs of our customers.