Fuji Research Institute Corporation

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1. The Challenge of Microfabrication Technology

While Europe and America are the leading nations in the microfabrication industry, an effort to establish this technology as a new pillar of industry in Taiwan, Singapore, and other Asian countries has recently gained momentum through the support from their national governments. There are also growing expectations in Japan that its manufacturing industry can be revitalized by microfabrication technologies, such as accelerometers, pressure sensors, and inkjet printer heads. Against this backdrop, Fuji-RIC has proposed applying our simulators (see Table) to provide various services such as data analysis, consulting, and the development of simulation systems for the microfabrication industry for which market growth is considered promising.

2. Future Challenges

In the future, Fuji-RIC would like to contribute to the field of microfabrication by developing an advanced simulation system through the use of our current achievements, including semiconductor process analysis, electrostatic/magnetostatic field analysis, optical, electronic and plasma analysis, thermal fluid analysis, chemical reaction analysis, and structural analysis. We would like to strive to take the lead among Japanese company in simulation systems for microfabrication technology.

Achievements in Development

Fuji-RIC Development Simulators	Description
FUJI-RIC / u -FLOW	The mesh generator can provide higher quality meshes which were difficult using the structured grids of FUJI-RIC / α -FLOW.
FUJI-RIC / α -FLOW, EWS version	FUJI-RIC / α -FLOW is the CFD system for a wide range of flow models.
FUJI-RIC / α -FLOW, PC-UNIX version	PC-UNIX version supports full-spec of EWS version on a Linux platform.
MISTRAL/MP (multiphase flow simulation system)	MISTRAL/MP is the CFD code for multiphase flows(gas/liquid,liquid/liquid) including evaporation/condensation model.
Microstructural stress and structure analysis simulation system	This structural analysis simulator can evaluate the thermal stress natural period, phase shifts, and time response of structures.
Microstructural fatigue and thermal stress analysis simulation system	This structural analysis simulator can evaluate changes in properties of materials, stress singularities in interfaces of layer stractures, and fatigue characteristics.