

## **Front-Cover**

*This SPELEEM (Spectroscopic Photoemission and Low Energy Electron Microscope) has been introduced into the SPring-8 beamline under the framework of Nanotechnology-related research under the Nanotechnology Researchers Network Project of MEXT. The SPELEEM, a multipurpose and high-performance microscope, allows us to perform element-specific imaging of materials and to investigate the electronic structure from a nano-scale area.*

*A series of R&D's is undergoing to achieve a spatial resolution less than 20nm. The magnetic domain contrast of ferro- and antiferromagnetic materials can be obtained using magnetic linear or circular dichroism. Real-time observation and time-resolving studies also become possible near future. Dynamical observations of crystal growth, phase transitions, adsorption, diffusion at surfaces, interfaces, chemical reaction and so on are expected.*

*The inset figures show the antiferromagnetic (AFM) domain structures of NiO(001) obtained by the SPELEEM.*

*(by T. Kinoshita and F. Z. Guo)*