특별강연 -1

# Nanocharacterization of Advanced Materials by FEG-TEM : Introduction

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Abstract

Multilayer heterostructure devices such as quantum well lasers, tunneling devices, nanocomposites and high electron mobility transistors are produced by nanoprocessing methods and therefore the characterization of such structures on a nano-scale is critical. TEM equipped with a field emission gun is an essential tool for investigating these materials in a cross-sectional manner.

Basic principles of FEG-TEM techniques, including parallel electorn energy loss spectroscopy (PEELS), energy filtering techniques (e.g., GIF system), electron holography (e.g., holoworks), ultra-high spatial resolution analysis using energy dispersive x-ray spectroscopy (EDXS), convergent beam coherent electron diffraction (CBCED), will be introduced in the presentation in addition to their applications to advanced materials. Also, the current EM research and MSA (Microscopy Society of America) activities in the United States will be discussed with respect to industrial and academic points of view.