

HAADF-STEM IMAGING AND MICROSCOPY OBSERVATIONS OF HETEROSTRUCTURES IN ELECTRONIC DEVICES

J. M. SHIOJIRI*

Kanazawa Medical University, Ishikawa 920-0293, Japan
Kyoto Institute of Technology, Kyoto 606-8585, Japan

Received February 7, 2004; published April 2, 2004

ABSTRACT

Atomic resolved high-angle annular dark field (HAADF) scanning transmission electron microscopy (STEM), which has been widely used for the analysis of crystal and defect structures, is a quite new technique developed in this decade and its imaging mechanism is quite complicated. The first part of this paper is devoted to physics to understand HAADF-STEM imaging. Then, our recent investigations of GaN-based laser diodes are reviewed which were performed by HAADF-TEM and high-resolution field-emission scanning electron microscopy.