A GaAs/AlAs Superlattice Certified Reference Material (NIMC CRM 5201-a)

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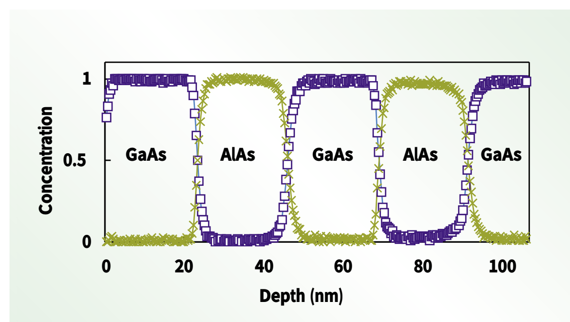
A certified reference material of GaAs/AlAs superlattice has been developed for surface chemical analysis. Thin films as well as multi-layered films are artifical materials fabricated that achive or modify some specific physical properties and can be applied to various advanced materials such as semiconductor devices, magnetic multilayers, otical mirros, X-ray mirrors, etc. Depth profiling by ion sputtering in surface chemical analysis is one of the most popular techniques to reveal layered materials. Excellent depth resolution on the nm level requires the use of a high quality reference material such as a superlattice which is suitable for the optimization of sputter depth profiling. The certified reference material consists of 4 layers whose thicknesses (~ 23nm) are certified with an accuracy of about 0.3nm and, in addition, whose interface roughness and surface oxide thickness are given as reference data.



Sputter depth profiling by Auger electron spectroscopy

Development of Particle Size Standards Through Absolute Mass Measurement of Aerosol Particles

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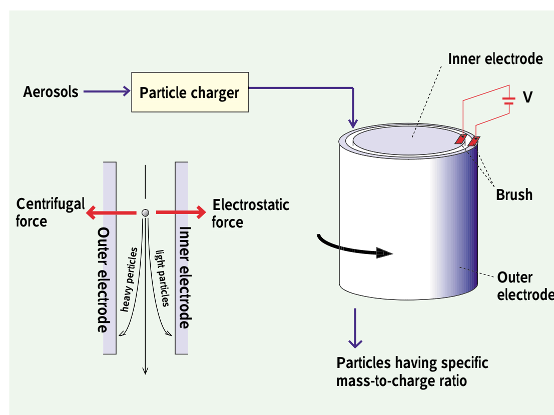
The methods for measuring the mass of fine particles suspended in the air are being studied in National Metrology Institute of Japan. In these methods, either the balance between the centrifugal and electrostatic forces or between the gravitational and electrostatic forces exerted on particles is used to classify particles according to their mass to charge ratio. These methods have been applied to the analysis of particulate matter emitted from motor vehicles in Atlanta, GA, and to the development of particle size standards.



Principle of the aerosol particle mass analyzer