

Development of Electron Microscopy Techniques used in the Studies of Microbiology

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Abstract

Several types of electron microscopes have been developed follow novel technology and research demand. For example, energy-filtered transmission electron microscope can be used to qualify the chemical bonds and quantify the composition of samples simultaneously; environmental scanning electron microscope can be used to observe colonization of living microorganisms directly; and atomic force microscope can be used to analyze three dimensional structures of observed objects. These novel technologies bring researchers to observe and to analyze microorganisms and materials that were unavailable or hard to execute before. For instance, structure and arrangement of melanin from pathogenic fungi and be observed with these new developed electron microscopes. In this article, application of atomic force microscope, energy-filtered transmission electron microscope, and environmental scanning electron microscope in microbial research are elucidated.

Key words : Electron microscopy, Microorganisms, Melanin

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