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The formation of molecular hetero-film consisting of green fluorescence protein (GFP) and viologen LB film using the electrophoretic sedimentation technique (EPS) is investigated. The fabrication condition by EPS such as the exposure voltage affects the topology and photoresponse of GFP films. Based on the surface topology measured by atomic force microscopy (AFM), the optimal electric field for the fabrication of GFP film was found as 4.5V.

Keywords: green fluorescent protein; viologen; electrophoretic sedimentation technique

INTRODUCTION

The green fluorescent protein(GFP) is the final light emitting protein in the bioluminescent jellyfish *Aequorea victoria*[1]. The GFP absorbs blue light and emits green light. Molecular electronic device consisting of GFP films for one-way electron transport has been developed due to their high response and excellent stability in photoelectric properties[2].

To construct the molecular electronic devices with GFP films, the formation of aggregated molecular films of GFP has been considered as one of the most important factors dominantly affecting the device performance. The film formation of protein by the electrophoretic sedimentation technique(EPS) using static force difference of molecules