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Examination of the Interface Formed from Protein Interactions in Gels PERUMAL RAMASAMY, Dept. Of Materials Science and Engineering, SUNY Stony Brook, LISA M. MILLER, National Synchrotron Light Source, Brookhaven National Laboratory, M. RAAFAT EL-MAGHRABI , Department Of Physiology And Biophysics, SUNY Stony Brook, MIRIAM RAFAILOVICH, Dept Of Materials Science and Engineering, SUNY Stonybrook — Understanding the interaction of proteins with one another in confined environments serves as an important step for developing faster protein separation methods. To understand proteinprotein interaction of oppositely charged proteins, fluorescently-labeled Albumin and poly-L-Lysine were subjected to electrophoresis in Agarose gels, in which the cationic albumin and the anionic poly-lysine were allowed to migrate towards each other and interact. Confocal microscopy was used to image the fluorescently-tagged proteins in the gel. The secondary structure of the proteins was studied using FTIR microspectroscopic imaging. Results showed that sharp interfaces were formed where the proteins met. Protein-protein interactions were observed through fluorescence quenching. The migration of the interface in the gel was found to be dependent upon the relative concentration of the proteins. The structure of the proteins at the interface, the fluorescent intensity modifications, and the mobility of the interface for different pore sizes are currently under investigation.

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