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Adsorption of phospholipid bilayers onto pullulan-modified cellulose surfaces HEEJUN CHOI, ZELIN LIU, ALAN ESKER, Virginia Tech — 1,2-Dimyristoyl-*sn*-glycero-3-phosphocholine (DMPC) vesicle adsorption onto regenerated cellulose and pullulan 4-bromocinnamate (P4BC) modified cellulose surfaces was investigated via surface plasmon resonance (SPR) spectroscopy and quartz crystal microbalance with dissipation monitoring (QCM-D). P4BC with a degree of substitution (DS) of 0.061 ± 0.002 from UV measurements and 0.058 from ^{1}H NMR was synthesized from pullulan and 4-bromocinnamic acid to yield P4BC. The deduced thicknesses from SPR for DMPC layers were $\sim$3.7 nm (bilayer) on regenerated cellulose surfaces and $\sim$2.1 nm (monolayer) on P4BC modified cellulose surfaces. Qualitative analysis of the QCM-D data also indicated that the DMPC layers on P4BC modified cellulose surfaces were thinner than on regenerated cellulose surfaces.

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