Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Control of Fibrinogen Assembly by Changing a Polarity of Surfaces JASEUNG KOO, Stony Brook University, YING LIU, Stony Brook, SARA SNOW, Stella K Abrahams High School, POOJA RAMBHIA, Jericho High School, TADANORI KOGA, MIRIAM RAFAILOVICH, DENNIS GALANAKIS, Stony Brook University — Thrombogenesis causes various problems associated with an interruption in the blood flow (e.g., myocardial and cerebral infarction), and a hindrance to use of blood-contact vascular biomaterials (e.g., hemodialysis and cardiopulmonary bypass) with long-term patency since undesired adsorption of blood components occurs on vessels or biomaterials, such as surface-induced thrombosis. we showed that this clotting procedure can be occurred on hydrophobic polymeric surfaces without thrombin cleavage. However, the fibrinogen fibers were not formed on the polar surface such as spun-cast polymer film with pyridine and phenol groups. We also found that αC domains play an important role in initiation of polymerization on surface. Therefore, molecular association was inhibited on the polar surfaces due to confinement of αC chains on the surfaces. These findings were directly applied to stent surface modification. The commercial stent consist of Co-Cr alloy forms undesired fiber formation. However, PS-r-PVPh (13% phenol) coated stent surfaces completely prevent fiber formation.

Jaseung Koo
Stony Brook University

Date submitted: 30 Nov 2008 Electronic form version 1.4