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Patterning Process of Membrane-Associated Proteins on a Solid Support with Geometrical Grooves CHERLHYUN JEONG, TAEYOUNG YOON, SIN-DOO LEE, School of Electrical Engineering, Seoul National University, Kwanak PO Box 34, Seoul 151-600, Korea, JOON HEON KIM, MYUNG CHUL CHOI, MAHN WON KIM, Department of Physics, Korea Advanced Institute of Science and Technology, Daejon 305-701, Korea — We have shown a patterning process of membrane-associated proteins through spontaneous assembling of the lipid anchors on a solid support with geometrical grooves. The lipid anchors possessing unbalanced effective molecular shapes are assembled near geometrical groove structures so as to minimize the free energy of elastic distortions. The specific patterning of the lipid anchors and the membrane-associated proteins can be attained without disturbing two-dimensional lateral fluidity of a supported membrane. Our patterning concept of the supported membrane would be applicable for devising biosensors and protein chips.

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