

Abstract Submitted
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Bending Elasticity of Bio-Membranes Studied by Neutron Spin-Echo ZHENG YI, DOBRIN BOSSEV, Indiana University — We have used neutron spin echo (NSE) spectroscopy to study the effects of the unsaturated double bond and the hydrocarbon chain length on the bending elasticity of lipid membranes. The bending elasticity κ of bilayer vesicles made of 1,2-Dioleoyl-*sn*-Glycerophosphocholine(18:1 PC), has been measured in the fluid (L_α) phase in different temperatures. When lipid bilayers made of DOPC are in fluid phase, the temperature effect on bending elasticity is minimal. The bending elasticities of 14:1 PC and 16:1 PC were measured in fluid phase in 30 ° C. We found that the lipid bilayers with longer chains have higher bending elasticities. Our data confirms that the stiffening of lipid bilayers increases with increasing chain length of the lipid molecules.

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