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Interfacial Characteristics of Semi Fluorinated Polymeric and Polymeric Liquid Crystalline Surfaces GANG CHENG, BRYAN SPRAUL, DENNIS SMITH, DVORA PERAHIA, Clemson University — The interfacial interactions of semi fluorinated perfluorocyclobutane (PFCB) liquid crystalline, and semi crystalline polymers have been investigated. The interfacial characteristics are critical in any of their applications in which a well define stable interface is required from LCD technology to wave-guides and lithography. The inherent segregation between fluorine rich and hydrogen rich segments results in induced liquid crystallinity within the polymers themselves, even though these groups are small. The segregation to the interfaces controls the capability of the surface energy of the system. In addition of interfacial tension measurements, we used their alignment of small LC molecules using of 4, 4'-octylcyanobiphenyl (8CB) as a model system to further explore their interfacial characteristics. The correlation between surface energies, dynamics of the interface and their effects of the orientation of small LC will be discussed.

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