

Abstract Submitted
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Glasses with extreme anisotropy: vapor-deposition of liquid crystals JARITZA GOMEZ, ANKIT GUJRAL, MARK D. EDIGER, Univ of Wisconsin, Madison — Vapor-deposited glasses can exhibit considerable anisotropy even when prepared from molecules for which no liquid crystalline states are known. Here we use spectroscopic ellipsometry to characterize vapor-deposited glasses of itraconazole, a known liquid crystal former. We are able to prepare macroscopically homogenous birefringent glasses of itraconazole consistent with single liquid crystalline domains. Glasses prepared on substrates held between $T_g - 10$ K and the clearing temperature show a positive birefringence, indicating that itraconazole molecules orient perpendicular to the substrate. Results from wide angle x-ray scattering indicate that a smectic phase is prepared by vapor deposition at $T_{sub} = T_g$. Depositions onto low temperature substrates prepare glasses in which itraconazole molecules orient parallel to the substrate. These results confirm our ability to use liquid crystals to prepare glasses with extreme anisotropy through physical vapor deposition.

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