

Abstract Submitted
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Evidence for a new molecular packing at low temperatures in vapor-deposited indomethacin KEVIN DAWSON, KEN KEARNS, WERNER STEFFEN, LIAN YU, MARK EDIGER — Thin films of the low molecular weight organic glassformer indomethacin were prepared at different substrate temperatures using physical vapor deposition. When analyzed by wide angle x-ray scattering, samples prepared at T_g-50 K showed a broad high intensity peak that is not present in samples prepared at T_g . When such samples were annealed at T_g+4 K the extra peak eventually vanished but only after 24,000 s (more than $500 \tau_\alpha$). At low deposition rates the WAXS signature of this new molecular packing is only observed for substrate temperatures below T_g-20 K. Based on WAXS data on supercooled indomethacin, the new WAXS peak is unexpected. These results suggest that ordinary indomethacin glasses aged to equilibrium 20 K below the conventional T_g would undergo a first order transition to a new amorphous phase.

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