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Fast Scanning Calorimetry study of non-equilibrium relaxation in 2-Ethyl-1-Hexanol[1] VLAD SADTCHENKO, DEEPANJAN BHATTACHARYA, The George Washington University, Department of Chemistry, CANDACE PANE, The University of Aberdeen — Fast scanning calorimetry (FSC), capable of heating rates in excess of 1000000 K/s, was combined with vapor deposition technique to investigate non-equilibrium relaxation in micrometer thick ultraviscous of 2-Ethyl-1-Hexanol (2E1H) films under high vacuum conditions. Rapid heating of 2E1H samples prepared at temperatures above approximately 145 K (standard glass transition temperature of 2E1H, Tgs), resulted in well manifested dynamic glass transitions at temperatures tens of degrees higher than Tgs. Furthermore, strong and complex dependence of dynamic glass transition temperature on the sample's initial state, i.e., the starting temperature of FSC scan was also observed. We discuss implications of these results for contemporary models of non-equilibrium relaxation in glasses and supercooled liquids.

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