

pane but not in the presently investigated compound V or VI. While pyrene and carbazole are both highly crystalline, their attachment to cyclohexane and bicyclooctene rings impart glass-forming ability to the hybrid systems with a T_g ranging from 43 to 132 °C depending on the type of pendant group, central core, and the spacer length connecting the two. Furthermore, the morphological stability of all seven compounds was demonstrated by the absence of recrystallization as the quenched glasses are heated from 0 °C across their respective T_g 's up to 200 °C at a heating rate ranging from 0.2 to 20 °C/min. The morphological stability was further substantiated by the absence of recrystallization from the melt upon thermal annealing at temperatures above T_g for a few days. Both the ability to form glasses and morphological stability against thermally activated crystallization are conducive to practical applications where thin glassy films are desired.

Acknowledgment. We thank Professor A. S. Kende of the Chemistry Department at the University of

Rochester for assistance in organic synthesis, Dr. H. Shi for contributing compound VII, and Mr. K. L. Marshall and Dr. A. Schmid of the Laboratory for Laser Energetics for helpful discussions as well as technical assistance. We would like to express our gratitude for the financial support provided by the Ministry of International Trade and Industry of Japan, and National Science Foundation under Grant CTS-9500737 and an Equipment Grant CTS-9411604. In addition, our advanced organic materials research was supported in part by the US Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC03-92SF19460, the University of Rochester, and the New York State Energy Research and Development Authority. The support of DOE does not constitute an endorsement by DOE of the views expressed in this article. Financial support provided by Armament Research, Development and Engineering Center to GeoCenters, Inc. is also gratefully acknowledged.

CM960297T