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**New insights on crystallization in a benchmark organic photovoltaic system by fast scanning chip calorimetry** NIKO VAN DEN BRANDE, University of Wisconsin-Madison, BRUNO VAN MELE, Vrije Universiteit Brussel, Belgium, MARK EDIGER, University of Wisconsin-Madison — Using the advanced thermal analysis technique of Fast Scanning Chip Calorimetry, which relies on thin membrane chips, a methodology was developed which allows for a true isothermal study, i.e. avoiding non-isothermal effects which may alter metastable structures, by employing scanning rates of 30000 $K.s^{-1}$. Isothermally formed structures, which were not observable before, were now conserved and analyzed in the subsequent heating. This methodology was used to investigate the P3HT/$PC_{61}$BM (poly(3-hexylthiophene/[6,6] phenyl $C_{61}$ butyric acid methyl ester) benchmark system used in organic photovoltaics, as well as its pure components. By applying the methodology to P3HT, the bell-shaped curve of isothermal crystallization rate was constructed for a P3HT layer with a thickness of ca. 550. Surprisingly, the $PC_{61}$BM acceptor is capable of crystallizing significantly below its glass transition, a type of behavior seen before for several non-polymeric organic glasses.

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