



FLASH DSC 1: A NOVEL FAST DIFFERENTIAL SCANNING CALORIMETER

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Thermal processes such as crystallization and reorganization of polymers occur in a wide range of transition rates. To analyze such processes, calorimeters with a broad scanning rate range are necessary. Due to the time constant and the sensitivity of a DSC, the scanning rate range is limited. Using a conventional DSC, the typical feasible scanning rates are between 0.01 K/min and 400 K/min. For studies of fast processes or the thermal behavior at process relevant cooling rates, faster scanning rates are necessary. The new Flash DSC 1 is designed for the technically relevant scanning rates between 30 K/min (0.5 K/s) and 2,400,000 K/min (40,000 K/s). The overlap between the conventional DSC 1 and the Flash DSC 1 is sufficiently large. Consequently the feasible scanning rate range covers almost 8 decades. The performance of the Flash DSC 1 is demonstrated for crystallization and reorganization of different polymers.