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Density fluctuations and phase transitions of ferroelectric polymer nanorods THOMAS P. RUSSELL, ANATOLI SERGHEI, University of Massachusetts Amherst — Permittivity measurements in the high frequency limit (i.e. in spectral regions not affected by dielectric dispersions) represent an effective mean to asses density fluctuations in dependence on temperature. This is used in the current study to investigate the phase transitions of ferroelectric polymer nanorods (crystallization, melting, Curie-transitions) down to diameters as small as 15 nm. As fabrication templates – and in the same time as measurement platforms in combination with Broadband Dielectric Spectroscopy – ordered arrays of parallel cylindrical nanopores are employed.

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