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Equilibrium features in the arrested phase separation of PNiPAM microgels

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We investigate the arrested phase separation of poly-N-isopropylacrylamide (PNiPAM) microgels. At large enough concentrations we observe the formation of a macroscopic gel-body that exhibits a peculiar temperature dependence. In a temperature-range, where the volume of the individual particles no longer changes, the final dimension of the macroscopic gel body depends on the depth of the quench into the phase separation regime. Increasing the quench depth results in a decrease of the dimension of the gel-body; this is reminiscent of a thermodynamically driven phenomenon and contrasts with the fact that the formation of the gel-bodies is due to the arrest of a phase separation process.