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## Effect of pressure on the micellar structure of PMMA-*b*-PNIPAM in aqueous solution

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Amphiphilic diblock copolymers feature self-assembly behavior in aqueous solution. In particular, poly(methyl methacrylate)-*b*-poly(*N*-isopropylacrylamide) (PMMA-*b*-PNIPAM) forms core-shell micelles upon heating above the cloud point of PNIPAM ( $T_{cp}$ ) [1]. Previously, it was found that pressure strongly affects the dehydration extent of PNIPAM homopolymers in aqueous solution [2].

Here, we present the effect of pressure on the micellar structure of PMMA-*b*-PNIPAM in aqueous solution by small-angle neutron scattering (SANS). In temperature-resolved experiments, we find that the micellar shell strongly dehydrates above  $T_{cp}$  at atmospheric pressure. In contrast, at 75 MPa, it remains hydrated, and the micelles form highly correlated aggregates. We also characterized the micellar structure in a pressure-resolved experiment at 31.8 °C. We find that, after crossing the co-existence line, the micellar shell appreciably shrinks, despite it remains partially hydrated. Thus, pressure is a tool to modify the micellar structure and the aggregation behavior of the micelles.

[1] C.H. Ko, C.M. Papadakis et al., *Macromolecules*. 2021, 54, 384.

[2] B.-J. Niebuur, C. M. Papadakis et al., *ACS Macro Lett.* 2017, 6, 1180.

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