

## Brush-like Interactions between Thermoresponsive Microgel Particles

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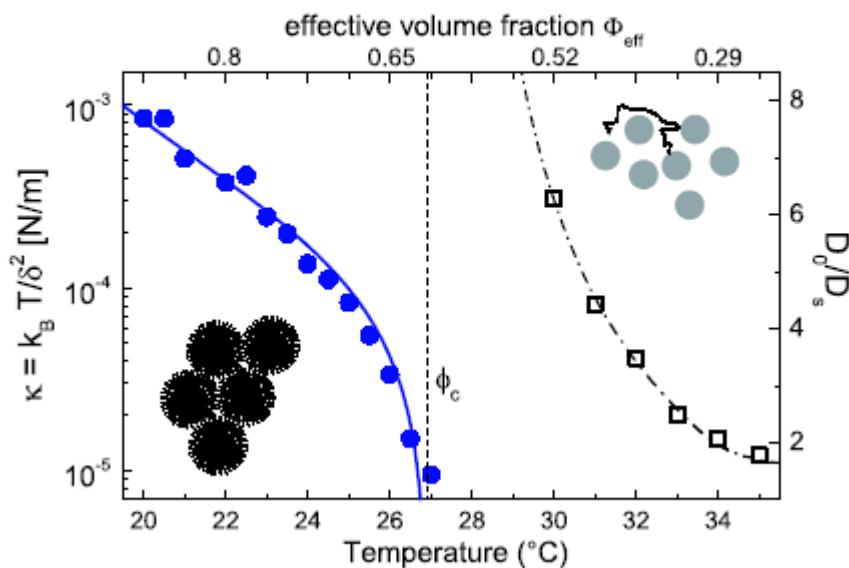
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Using a simplified microstructural picture we show that interactions between thermosensitive microgel particles can be described by a polymer brush like corona decorating the dense core. The softness of the potential is set by the relative thickness  $L_0$  of the compliant corona with respect to the overall size of the swollen particle  $R$ .

The elastic modulus  $\kappa$  in quenched solid phases derived from the potential is found to be in excellent agreement with diffusing wave spectroscopy (DWS) data and mechanical rheometry. Our model thus provides design rules for the microgel architecture and opens a route to tailor rheological properties of pasty materials.

### Microgel dynamics : elastic constant ( $\kappa$ ) and diffusion coefficient ( $D_s$ ) from DWS



### References

- [1] F. Scheffold, P. Diaz-Leyva, M. Reufer, N. Ben Braham, I. Lynch, J. L. Harden, Phys. Rev. Lett. 104, 128304 (2010)
- [2] M. Reufer, P. Diaz-Leyva, I. Lynch and F. Scheffold, Eur. Phys. J. E28, 165 (2009)