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Flow past a sphere: Predicting enhanced drag with shear-thinning fluids, dissipative and constant shear-viscosity models

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Highlights

- Enhanced drag for three geometric aspect-ratios using swanINNFM model.
- Experimental drag captured quantitatively with a dissipative-elastic model.
- Overall lowering of drag levels with inclusion of shear-thinning.
- Dissipative- $\{FENE, PTT\}$ variants display drag-enhancement.
- Under fixed elasticity, drag increases with rise in solvent fraction.

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