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Microrheology of Actin Network Depends on Probe Size, Surface Chemistry and Depletion Effect JUN HE, JAY TANG, Brown University — Microrheological properties of F-actin were measured by video particle tracking using beads with different size and surface chemistry. We found that the mean square displacements of probe particles scale with bead diameter with an exponent of about -0.45 instead of -1. This scaling behavior results in the measured shear moduli of F-actin network varying with the probe size. The main features of our data can be accounted for by the probe surface stickiness and the opposing depletion effect, both of which are confirmed by confocal imaging of beads in the actin network.

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