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Viscosity characterization of polymer and polymer-nanocomposite materials with the AFM EDWARD KRAMKOWSKI, DAVID WILSON, ASHIS MUKHOPADHYAY, PETER HOFFMANN, Wayne State University — Traditional methods for characterizing the viscosity of solutions, while accurate, require the use of a few grams of the material being investigated. As the production methods of these materials becomes more costly, devising techniques that can accurately measure their physical properties with a much smaller mass of material would prove useful in streamlining the development process. To this end, we aim to design a quick, reliable, and cost-effective method of measuring viscosity through the use of an atomic force microscope, which requires less than a gram of the sample being tested. Here we will introduce preliminary results, comparing the AFM-determined viscosity with values attained through the use of other commonly used measurement devices.

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