

Abstract Submitted  
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**Magnetic polystyrene-based microbeads for bioassays** MARCELA L. REDIGOLO, GAUTAM HEMANI, STEPHEN ZHOU, DIANDRA L. LESLIE-PELECKY, University of Texas at Dallas — Flow cytometry uses fluorescence to detect specific compounds in a sample; however, the number of different wavelengths that can be detected limits the number of analytes that can be identified. We are adding magnetism as an additional parameter to increase the number of analytes that can be simultaneously screened for. We report the synthesis of polystyrene microbeads loaded with exchange-coupled samarium cobalt ( $\text{SmCo}_5$ ) particles.  $\text{SmCo}_5$  was chosen for its high remanent magnetization, allowing measurement without the need for an applied field. The magnetic-particle-containing polystyrene beads had an average size of  $8 \mu\text{m}$ . Dispersability in water was enhanced by coating them with the triblock copolymer Pluronic F-127, which also facilitates future functionalization. We will present the synthesis of the microparticles and the effect of synthesis parameters on their magnetic and physical properties.

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