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**Magnetic properties of biofunctional dextran-magnetite composite particles** — ●MARTIN LOICHEN, JULIANE ISSLE, and UWE HARTMANN — Universität des Saarlandes, Institut für Experimentalphysik, AG Prof. Dr. U. Hartmann, 66123 Saarbrücken, Germany

Superparamagnetic magnetite particles embedded in a dextran matrix constitute spherical particles of a diameter of 100 to 500 nm. They are used to subject cells to specific proteins. For this purpose the composite particles are equipped at the surface with certain reactive groups allowing the binding of the respective proteins. The particles are then deposited on magnetic or nonmagnetic surfaces on which subsequently the cells are grown. The magnetic properties of the composite particles were studied in a liquid and solid environment by magnetometry. Furthermore the microscopic properties of the particles were investigated by electron microscopy, atomic and magnetic force microscopy. The results show how the individual 10 nm magnetite particles interact and together constitute the properties of the individual composite particles. The results are of importance in order to optimize the behavior of the composite particles under the influence of external magnetic fields.

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