



2013年度 物質生命理工学科コロキウム

上智大学 理工学部 物質生命理工学科 主催
理工学部・理工学振興会 共催

“Local Magnetic Fields for Positioning and Controlled Movement of Small Objects”

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場所：11号館 209号室



Artificial magnetic domain patterns can be fabricated in exchange biased magnetic bilayers and some other magnetic multilayer systems by ion bombardment induced magnetic patterning (keV He⁺ ion bombardment in combination with resist masks and an applied magnetic field during the bombardment). This technique enables a local modification of, e.g., the exchange bias field in magnitude and in direction. Remanently stable magnetic patterns (artificial domains) may be created without large changes in surface topography. These patterns allow also a tailoring of the associated magnetic strayfield landscapes. The talk will discuss the fundamentals for fabricating such artificial domain patterns and the use of the associated stray field landscapes for positioning of molecules, of superparamagnetic micro- and nanoparticles, the controlled movement of superparamagnetic particles by moving domain walls and the influence of magnetic stray fields on the wrinkling of molecular glasses. The application of controlled movement of superparamagnetic beads in a biosensor lab-on-a-chip device is discussed.

学生の聴講歓迎・申込不要・参加無料

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