

전기 전도성을 갖는 마이크로 로드 자기조립체의 크기 조절에 관한 연구

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Size-controlled microrods with electrical conductivity were prepared. For the microrods preparation, mixture of a novel self-assembling molecule and an organic solvent was evaporized to induce self-assembly(EISA). The growth of microrods was controlled by evaporation temperature in range of -15°C to 80°C , which might influence on the nucleation and growth of microrods. As an application of the EISA, straight magnetic microrods were prepared by EISA of simple mixture solution containing magnetic nanoparticles. The magnetic microrods were put on external magnetic field for alignment of magnetic microrods.

Electrical conductivity of the microrods was also examined. By using micro ribbon technique, the microrod was bridged between gold electrodes. Then, the conductivity of the microrods was measured using the probe station. Alignment and characteristics of the magnetic microrods were further investigated using optical microscopy, NMR spectroscopy, SEM, and TEM. The size-controlled microrod having conductivity is expected to be applicable in diverse engineering purposes such as organic electronic and nanorod-based electronic devices.