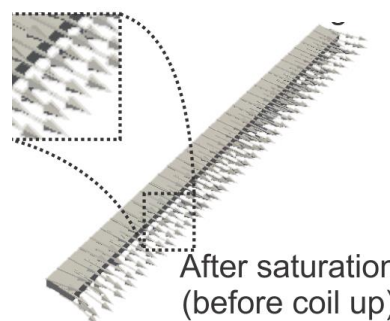
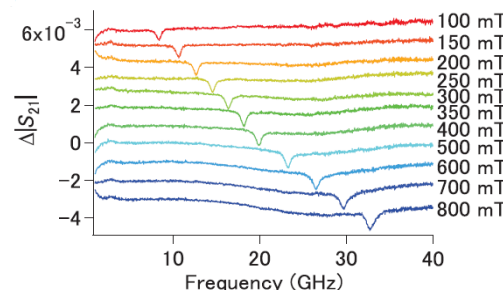
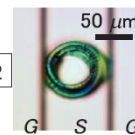
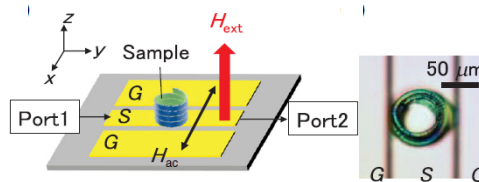


磁気カイラルメタ分子の創製

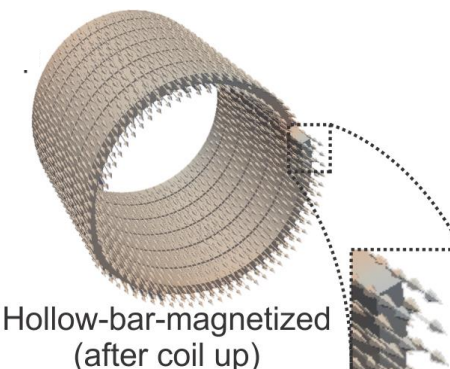
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Ferromagnetic Resonance of a Single Magneto-chiral Metamolecule of Permalloy

Toshiyuki Kodama, Satoshi Tomita, Takeshi Kato, Daiki Oshima, Satoshi Iwata, Satoshi Okamoto, Nobuaki Kikuchi, Osamu Kitakami, Nobuyoshi Hosoi, and Hisao Yanagi



After saturation
(before coil up)



Hollow-bar-magnetized
(after coil up)

空間・時間反転対称性が同時に破れた系は方向に依存する複屈折性を示し、一方向性ミラーや人工ゲージ場への展開が期待されている。本研究では、磁性金属から成るカイラル構造を創製し、強磁性共鳴実験を通じて、時空の対称性が破れた単一磁気カイラルメタ分子に対する高周波挙動の精密測定に成功した。

Breaking in the space-inversion and time-reversal symmetry gives rise to a directional birefringence which is a key factor for realization of a “one-way mirror” and an artificial gauge field. In this work, we have succeeded in fabrication of magneto-chiral metamolecules of permalloy and confirmed their hollow-bar-type magnetization configuration necessary for obtaining the directional birefringence. This achievement may pave the way to manipulate electromagnetic waves in the millimeter and terahertz wave regimes.