4. Title: Subwavelength terahertz spin-flip laser based on a magnetic point-contact array
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   Abstract: We present a theoretical design for a single-mode, truly subwavelength terahertz disk laser based on a nanocomposite gain medium comprising an array of normal-metal/ferromagnetic (FM) point contacts embedded in a thin dielectric layer. Stimulated emission of light occurs due to spin-flip relaxation of spin-polarized electrons injected from the FM side of the contacts. Ultrahigh electrical current densities in the contacts and a dielectric material with a large refractive index, neither condition being achievable in conventional semiconductor media, enables the thresholds of lasing to be overcome for the lowest-order modes of the disk, making single-mode operation possible.