Magnetic light.

Supplementary information.

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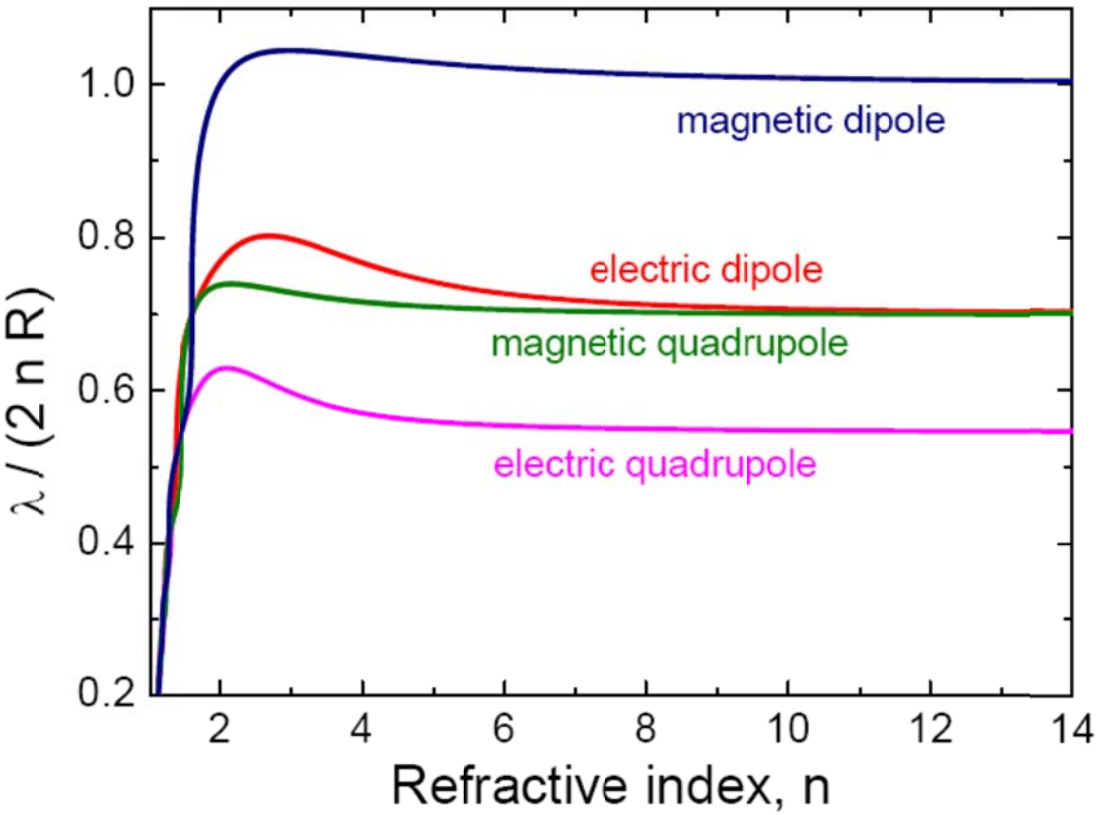
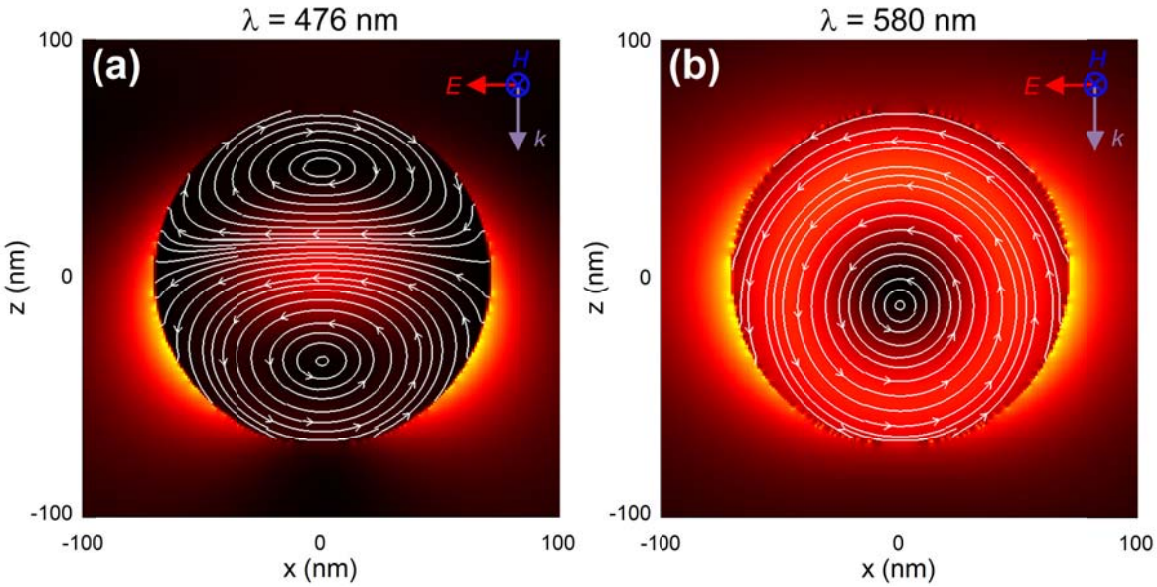
Supplementary Figure 1



Supplementary figure 1: Hierarchy of the electromagnetic resonances of spherical high-refractive index dielectric particles calculated in the frame of Mie theory. This figure demonstrates that above certain value of the refractive index the position of all multipole resonances corresponds to a fixed ratio of the wavelength inside the particle to its geometrical radius. In the figure: R is the nanoparticle radius, n is the refractive index of the nanoparticle dielectric material, λ is the wavelength of light.

Supplementary Figure 2



Supplementary figure 2: FDTD simulations of electric field distribution inside and outside a silicon particle with diameter 140 nm (Fig.3b) in free space irradiated by a plane wave from top. The plots show field distributions in the particle centre at (a) electric (476 nm) and (b) magnetic (580 nm) resonance wavelengths. The white arrows show direction of displacement currents inside the particle. It can be seen that at 580 nm electric field/displacement currents have a ring shape which leads to the magnetic dipole radiation.