





Dark-field optical microscopy images of magnetic photonic chains with different diffraction colors switched between "off" (a, c, e: without magnetic field) and "on" (b, d, f: with vertical magnetic field) states. These photonic chains diffract at different wavelengths because they were prepared using Fe3O4 CNCs of different average sizes: a, b) 182 nm, c, d) 160 nm, e, f) 113 nm. All images are at the same scale.

ADVANTAGES

- ▶ The diffraction wavelength of these photonic chains can be tailored across the visible spectrum.
- ▶ The chain length and interparticle separation can be conveniently controlled.
- ▶ Fast on/off switching and tolerant to environmental variances.
- ▶ Excellent mechanical and optical stability.

SUGGESTED USES

- ▶ Color displays
- ▶ Biological and Chemical sensing
- ▶ Biomedical imaging
- ▶ Biomedical labeling

RELATED MATERIALS

- ▶ [Magnetically responsive photonic nanochains](#)

INVENTIONS BY PROF. YADONG YIN

Please see all [inventions by Prof. Yadong Yin and his team at UCR](#)