

201. Title: Tunable optical transmission through gold slit arrays with Z-shaped channels

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Abstract: The transmission of a normally incident wave through an array of subwavelength gold film with Z-shaped slits has been explored by using the finite-difference time-domain method. The results show that the transmission of a thinner metal film perforated with a Z-shaped slit array behaves nearly the same as that of a thicker metal film perforated with straight slit array with the same central slit length, which is useful for the miniaturization of the optical device. It is also presented that the transmission of a Z-shaped slit array sensitively depends on the slit geometrical parameters. By adjusting the width and length of each section of the Z-shaped slit, noticeable magnitude modification of the transmission, redshift, and blueshift of the resonance modes is found, which is useful for the design of frequency-selective and sensor optical devices.