

# Broadband enhanced transmission through the stacked metallic multi-layers perforated with coaxial annular apertures

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This paper theoretically and experimentally presents a first report on broadband enhanced transmission through stacked metallic multi-layers perforated with coaxial annular apertures (CAAs). Different from previous studies on extraordinary transmission that occurs at a single frequency, the enhanced transmission of our system with two or three metallic layers can span a wide frequency range with a bandwidth about 60% of the central frequency. The phenomena arise from the excitation and hybridization of guided resonance modes in CAAs among different layers. Measured transmission spectra are in good agreement with calculations semi-analytically resolved by modal expansion method.

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