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Structured Metal Film as Perfect Absorber XIANG XIONG, SHANG-CHI JIANG, RU-WEN PENG, MU WANG, Nanjing University — With standing U-shaped resonators, fish-spear-like resonator has been designed for the first time as the building block to assemble perfect absorbers. The samples have been fabricated with two-photon polymerization process and FTIR measurement results support the effectiveness of the perfect absorber design. In such a structure the polarization-dependent resonance occurs between the tines of the spears instead of the conventional design where the resonance occurs between the metallic layers separated by a dielectric interlayer. The incident light neither transmits nor reflects back which results in unit absorbance. The power of light is trapped between the tines of spears and finally be absorbed. The whole structure is covered with a continuous metallic layer with good thermo-conductance, which provides an excellent approach to deal with heat dissipation, is enlightening in exploring metamaterial absorbers.

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