

Abstract Submitted  
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**Construction of Chiral Metamaterial with U-Shaped Resonator**

**Assembly** XIANG XIONG, WEI-HUA SUN, National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, YONG-JUN BAO, Department of Mechanical Engineering, Northwestern University, RU-WEN PENG, MU WANG, National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, CHENG SUN, Department of Mechanical Engineering, Northwestern University, XIANG LU, JUN SHAO, ZHI-FENG LI, National Laboratory for Infrared Physics, Shanghai Institute of Technical Physics, NAI-BEN MING, National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University — Chiral structure can be applied to construct metamaterial with negative refractive index (NRI). In an assembly of double-layered metallic U-shaped resonators with two resonant frequencies  $\omega_H$  and  $\omega_L$ , the effective induced electric and magnetic dipoles, which are contributed by the specific surface current distributions, are collinear at the same frequency. Consequently, for left circularly polarized light, NRI occurs at  $\omega_H$ , whereas for right circularly polarized light it occurs at  $\omega_L$ . Our design provides a new example to apply chiral structures to tune electromagnetic properties, and could be enlightening in exploring chiral metamaterials.

Xiang Xiong  
National Laboratory of Solid State Microstructures and  
Department of Physics, Nanjing University

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