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Thermoelectric effects and band-dependent scattering of normal-state quasiparticles in spin-triplet superconductor Sr_2RuO_4 ZHUAN XU, XIANGFAN XU, Zhejiang University, China, TIJIANG LIU, DAVID FOBES, ZHIQIANG MAO, Tulane University, YING LIU, Pennsylvania State University — We present the *first* measurement on Nernst effects in the normal state of odd-parity, spin-triplet superconductor Sr_2RuO_4. Below 100 K, the negative Nernst signal was found to be large and nonlinear as a function of magnetic field with its absolute value increasing rapidly as the temperature was lowered. After reaching a maximum around $T = T^* = 20$ - 25 K, however, the Nernst signal drops linearly with the decreasing temperature. No corresponding feature was found around this temperature in the specific heat. We argue that the large value of the Nernst signal is related to the presence of multibands and the nonlinearity to band-dependent magnetic fluctuation in Sr_2RuO_4. Furthermore, the quasiparticle scattering from the magnetic fluctuation is suppressed below T^* due to the emergence of coherence among quasiparticles in the γ band, an active band for superconductivity in Sr_2RuO_4. Results on temperature dependence of the thermopower, which was seen to exhibit a sharp kink around T^*, provided further support to this picture of band-dependent normal-state properties. Our thermoelectric measurements appear to suggest that the suppression of the magnetic fluctuation makes it possible for the spin-triplet superconductivity to emerge in Sr_2RuO_4.

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