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Thermoelectric power and Nernst effect studies in the metallic and field-induced spin density wave states in $(TMTSF)_2ClO_4$ EUN SANG CHOI, JAMES S. BROOKS, NHMFL/Florida State University, HAEYONG KANG, YOUNJUNG JO, WOUN KANG, Ewha Womans University, Seoul, Korea
— We have measured the angular dependence of thermoelectirc power (TEP) and Nernst effect of $(TMTSF)_2ClO_4$. At low temperatures and in the metallic state, Nernst effect shows giant resonant signals around the Lebed magic angles, while TEP is small without noticiable angular dependence. This behavior is very similar to what was observed in $(TMTSF)_2PF_6$ in the metallic state [Wu et al., Phys. Rev. Lett. **91** 56601(2003)]. By entering the field-induced spin density wave (FISDW) state, both TEP and Nernst signal show complicated behaviors reflecting the FISDW subphase transitions. Remarkably, the resonant Nernst effect still persists in the FISDW state and with even lager amplitude. By increasing the perpendicular field above ~ 6.5 T, both TEP and Nernst effect becomes small again at all angles. Our Nernst effect results are inconsistent with some proposed models for the metallic state of $(TMTSF)_2PF_6$, which may suggest this phenomenon is beyond the Fermi liquid description.

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