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Anisotropic transport in single-crystal molybdenum bronze, $\mathbf{Li_{0.33}MoO_3}$[1] SAEED MOSHFEGHYEGANEH, JOSHUA L. COHN, University of Miami, JOHN J. NEUMEIER, Montana State University — We present transport measurements (resistivity, thermopower, thermal conductivity) on single crystals of the quasi-one-dimensional semiconductor $Li_{0.33}MoO_3$ in the temperature range 200-500 K. First synthesized and studied long ago,[2] the thermal and thermoelectric properties for this compound have not been previously reported. We find extreme anisotropy in the Seebeck coefficient within the $a-c$ planes, with $S_c - S_a \simeq 300\mu$V/K near room temperature. The thermal conductivity at room temperature in the $a-c$ planes was $\sim 1.5-2$ W/mK and 7-8 times smaller along b^*. We also report x-ray studies of the out-of-plane (b^*) lattice constants indicating a small structural transition at $T \approx 350$ K that coincides with anomalies in the transport properties.

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[2]B. T. Collins *et al.*, J. Sol. St. Chem. bf 76, 319 (1988).

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