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Synthesis and thermoelectric properties of Na_xCoO_2 single crystal[1] QING JIE, YUFENG HU, QIANG LI, Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory — Na_xCoO_2 has been known to be a potential thermoelectric material because of its large thermoelectric power and low resistivity. Recently, $Na_xCoO_2 \cdot yH_2O$ was discovered as a superconductor with a transition temperature T_c of about 5K. Further understanding of the electron structure and properties of this material need larger samples of Na_xCoO_2single crystal. In our work, Na_xCoO_2 single crystals were grown by flux method. It was found that choosing an appropriate slow cooling temperature region can increase the size of the single crystals grown by this method. The size of the largest single crystal is about $5\times4\times0.02mm^3$. The structure and thermoelectric properties of these crystals will be discussed.

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