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Temperature dependence of conductivity measurement for conducting polymer[1] LEANDRO GUTIERREZ, JESUS DURAN, ANNE ISAH, PATRICK ALBERS, MICHAEL MCDOUGALL, WEINING WANG, Seton Hall University — Conducting polymer-based solar cells are the newest generation solar cells. While research on this area has been progressing, the efficiency is still low because certain important parameters of the solar cell are still not well understood. It is of interest to study the temperature dependence of the solar cell parameters, such as conductivity of the polymer, open circuit voltage, and reverse saturation current to gain a better understanding on the solar cells. In this work, we report our temperature dependence of conductivity measurement using our in-house temperature-varying apparatus. In this project, we designed and built a temperature varying apparatus using a thermoelectric cooler module which gives enough temperature range as we need and costs much less than a cryostat. The set-up of the apparatus will be discussed. Temperature dependence of conductivity measurements for PEDOT:PSS films with different room-temperature conductivity will be compared and discussed.

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