Round-robin measurement survey for Seebeck coefficient standard reference material

NATHAN LOWHORN, WINNIE WONG-NG, MAKOTO OTANI, MARTIN GREEN, National Institute of Standards and Technology, THANH TRAN, Naval Surface Warfare Center — Full characterization of a thermoelectric material requires measurement of the electrical resistivity, thermal conductivity, and Seebeck coefficient. While standard materials exist or have existed for the first two properties, a Seebeck coefficient standard material with moderate or high values does not exist. In an effort to expedite research efforts in this field, we have initiated a project to develop a Seebeck coefficient, or thermopower, standard reference material. To this end, we have conducted a round-robin measurement survey of candidate standard materials. Both rounds of the survey have been completed, and the results and methodology will be presented.

Nathan Lowhorn
National Institute of Standards and Technology

Date submitted: 20 Nov 2006

Electronic form version 1.4