

Shear Modulus and Thermal Conductivity of Polycrystalline hcp ^4He at Low Temperatures

M. Yu. Brazhnikov^a, Y. M. Mukharsky^b, D. E. Zmeev^a, A. A. Levchenko^c, and A. I. Golov^a

^aSchool of Physics and Astronomy, The University of Manchester, Manchester M13 9PL, UK

^bCEA-Saclay/SPEC, Gif-sur-Yvette – Cedex, 91191 France

^cInstitute of Solid State Physics, Russian Academy of Sciences, Chernogolovka 142432, Russia

We have built a high-quality ($Q = 5 \times 10^6$) torsional oscillator with a hollow torsional rod of 1.1 mm i.d. Results of investigations of the rigidity and thermal conductivity of polycrystalline samples of hcp ^4He , grown inside the torsional rod, will be presented.

Section: QS - Quantum solids

Keywords: solid helium, shear modulus