

MICROGRAVITY SCIENCES AND PROCESSES (A2)
Microgravity Experiments from Sub-orbital to Orbital Platforms (3)

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ON THERMAL CONDUCTION OF NANOFLUIDS
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Abstract

QNEM Experiments to be performed in parabolic flights to help understanding of contradictory results obtained on conductivity of nanofluids. On ground the conductivities of several nanofluids have been measured varying volume fraction of nanofluids and temperatures, with 3 different techniques in our laboratory. Comparison of these ground results, and with additional techniques in literature, shows yet unexplained differences, that could be better understood if sedimentation and convection could be avoided. For these reasons, the QNEM experiment has been selected as a "Fly your thesis" by ESA and will be carried in beginning 2011 in the ESA parabolic flights. We here report the ground results obtained in our laboratory by three different techniques, analyse them, and describe the parabolic flight experiment.