

## Contribution of ISU

ISU is willing to contribute to the existing cooperation between Forschungszentrum Jülich GmbH (JÜLICH) and Georgian partner institutions (GEORGIA): Ivane Javakhishvili Tbilisi State University (TSU), Georgian Technical University (GTU) as sealed in the Memorandum of Understanding (dated 3/5/2010, attached as Annex A). The contribution of ISU will be further referred to as part of the contribution of GEORGIA.

JÜLICH and GEORGIA agree to expand their cooperation in the following new areas:

**(i) Research and Technology Center “Nanostructured Materials for Renewable Energy”:**

Research and technology centre “Nanostructured Materials for Renewable Energy” was founded at the faculty of Engineering of ISU in 2011. Research is conducted at the direction of new nanostructured materials for energy conversion devices. Particularly, we investigate thin nanostructured layers with focus on their electronic Thermoelectric and Photovoltaic properties. Such layers increase conversion efficiency of Thermoelectric converters by offering higher Seebeck coefficient without changing electrical and thermal conductivities. Nanostructured layers increase energy conversion efficiency of Photovoltaic devices by offering higher electron mobility and higher photon absorption with respect to plain layers currently used for Photovoltaic converters. In addition, we utilize nanostructuring to improve characteristics of Transparent Conducting Oxides, used as protection layers in Photovoltaic devices. We also work in the direction of hybrid Photovoltaic and Thermoelectric energy converters.

**(ii) Young scientists from ISU will contribute in joint Research and Education:**

Master and PhD students will participate in Joint Research and Education Programme Calls including, Forschungszentrum Jülich and Shota Rustaveli National Science Foundation to demonstrate their excellence and get funding for joint scientific research.