

Project No : **GRD1-2000-25877**

Project Acronym : **NANOTHERMEL**

Project Title : **NANO-ENGINEERING OF HIGH PERFORMANCE
THERMOELECTRICS**

Duration : **36 Months - Starting Date : Jan 1, 2001**

Project Abstract : The intention of this project is to develop nano-engineered high performance thermoelectric devices and systems. The project focuses on the development of novel thermoelectric devices for power generation, cooling and sensors for both earth-bound and space applications. The basic concept of the project is the development and the synthesis of nanostructured TE materials, NanoThermel, with enhanced ZT ($ZT > 3$). This is achieved by nanostructuring novel TE materials with specific composition, by introducing doping elements into the crystal lattice or as rattling guest atoms in open cavities (cages). High performance TE devices will be designed and fabricated from TE elements of NanoThermel materials with high ZT. The consortium is made of 10 partners from 6 member states, with comprehensive expertise in the TE field. This ensures project integration from design/synthesis of novel materials to design/fabrication of high performance TE devices. The Partnership consists of 3 research groups (theory, synthesis and characterisation), one electrical engineering group and an industrial research centre (design and evaluation of devices), and two industrial partners (prototype manufacturing and commercialisation).

Project Co-ordinator : **Prof. Mamoun Muhammed**

KUNGLIGA TEKNISKA HÖGSKOLAN

**(Materials Chemistry, MSE, Royal Institute of
Technology)**

Assistant Co-ordinator: **Mr. Lennart Holmgren**