

Network partners

The Network **Nanotechnology for more efficiency in geothermal systems** (NanoGeoTherm) was founded in December 2020. It is an association of companies with research facilities and institutions. The network is managed by Nanoinitiative Bayern GmbH. We would like to thank the Federal Ministry for Economic Affairs and Climate Action for funding within the framework of the Central Innovation Programme for SMEs (ZIM).

FISCHER
GMBH SPEZIALBAUSTOFFE

GMP

Erdwärme · Brunnenbau

KLINIK

inEcoTox

SMART ADVANCED
SYSTEMS GMBH

SKZ
Das Kunststoff-Zentrum

FAU
FRIEDRICH-ALEXANDER
UNIVERSITÄT
ERLANGEN-NÜRNBERG

**TECHNISCHE UNIVERSITÄT
CHEMNITZ**

**TECHNISCHE
UNIVERSITÄT
DRESDEN**

Cluster
Nanotechnology

05/2022

Objectives

- Pooling of partner competencies
- Exchange of information between all partners along value-added chains
- Cooperation in development projects
- Use of nanomaterials for development and improvement of material solutions
- Joint public relations
- Organisation of expert events, status meetings, workshops and seminars
- Strategic expansion of the network

Become a partner!

**Network NanoGeoTherm
Nanoinitiative Bayern GmbH**

Dr-Ing Peter Grambow

Katja Schröder

Josef-Martin-Weg 52

D - 97074 Würzburg

Phone: +49 931 31 - 89373

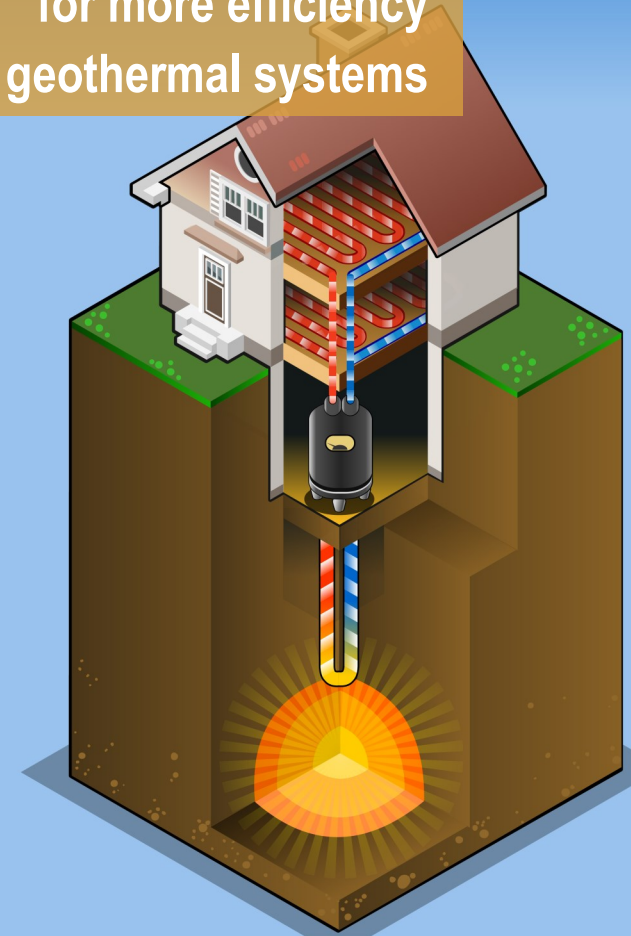
E-Mail: katja.schroeder@nanoinitiative-bayern.de

Internet: www.nanogeotherm.de

www.linkedin.com/showcase/netzwerk-nanogeotherm



**Nanotechnology
for more efficiency
in geothermal systems**





Network NanoGeoTherm

The use of geothermal energy, especially near-surface geothermal energy, has become more important in recent years as it provides a stable, sustainable, and climate-friendly option to heat and cool buildings, technical facilities, and even entire neighbourhoods.

The development and implementation of new materials is a promising way to increase and control electrical and thermal conductivity, making near-surface systems more efficient. For example, nanomaterials can be used to target electrical and thermal conductivity in plastics and other materials. The constant progress in the further development and mass production of nanomaterials including the consideration of gained knowledge in fields of analytics and occupational and environmental safety makes this class of materials a promising candidate to increase the total efficiency geothermal system.

Core competencies

- Bring together expertise from geothermal energy and nanotechnology
- Produce and characterise nanomaterials
- Apply different dispersion techniques
- Perform ecotoxicological studies
- Summarise geotechnical services from subsoil investigations to installation of a geothermal system
- Planning and executing boreholes
- Develop and produce geothermal probes and backfill materials

Your contact to the network



Dr-Ing Peter Grambow
Katja Schröder
Tel. +49 931 31-89373
E-Mail: katja.schroeder@nanoinitiative-bayern.de

Development lines

Increasing the electrical and thermal conductivity of plastic components

for optimised heat transport through conductive geothermal probes.

Optimisation of backfill materials

for better conductivity and thermal coupling between pipe and filling material.

Improvement of the heat transfer fluids

for increased heat absorption.

Ecotoxicological investigations

for a verified safe use of nanomaterials.