

Report on the Transnational Access Activity carried out within MICROKELVIN

The eligibility of transnational access to a MICROKELVIN TA site implies the submission of the following:

1) **The Certification of visit**

The form "Certification of visit" must be completed and signed by the access provider in charge of the infrastructure and the leader of the project.

2) **A TA project report**

The form for the TA project report is contained within this document. It should be completed after project end by the group leader of the project. You must respect the limited number of words specified, longer descriptions will be rejected. Figures/tables may be attached at the end of the document. The document must be submitted in an editable format (doc, rtf).

3) **A User group questionnaire**

To enable the Commission to evaluate the Research Infrastructures Action, to monitor the individual contracts, and to improve the services provided to the scientific community, each project leader of a user-project supported under an EC Research Infrastructure contract is requested to complete a "user group questionnaire". The questionnaire must be submitted once by each user group to the Commission as soon as the experiments on the infrastructure come to end.

The user group questionnaire is not part of this document and must be completed on-line. It is accessible at:

http://cordis.europa.eu/fp7/capacities/questionnaire_en.html.

► **Please note that any publications resulting from work carried out under the MICROKELVIN T**

A activity must acknowledge the support of the European Community :

“The research leading to these results has received funding from the European Community’s Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 228464 (MICROKELVIN).”



MICROKELVIN Transnational Access Project Report

1. General information

Project number:	CNRS11-1	
Project Title:	Rapid Thermometers for Specific heat measurements in thermodynamic equilibrium	
Lead scientist: ¹	Title:	Privatdozent Dr.
	First name:	Sven
	Last name:	Sahling
	Birth date:	Jena, 04/12/1951
	Passport number:	
	Research status/Position:	Privatdozent, Dr. rer. nat. habil.
	New User: ²	Yes
	Scientific Field:	Condensed matter Physics
	Home institution:	Institut für Festkörperphysik TU Dresden
	Is your home institution MICROKELVIN partner?	No
	Business address:	Technische Universität Dresden
	Street:	Zellischer weg 16
	PO Box:	
	City:	Dresden
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¹ The lead scientist indicated here is expected to participate in the campaign as a user of the infrastructure.

² Indicate 'Yes' only if the user has never visited the infrastructure before this specific project, otherwise write 'No'.

2. Project information

<p><u>Please, give a brief description of project objectives:</u> (250 words max)</p>	<p>The various contributions to the heat capacity of a $\text{Sr}_{14}\text{Cu}_{24}\text{O}_{41}$ single crystal at low temperatures are complex. In addition to the phonon contribution, we found a magnetic field independent quasi linear term, 2 Schottky terms, which are strongly time dependent and 4 Schottky terms, which are time independent, but field dependent. For the two time- and field-dependent contributions the relaxation time spectrum was determined as a function of temperature and magnetic field.</p>
<p><u>Technical description of work performed:</u> (250 words max)</p>	<p>The heat capacity of a $\text{Sr}_{14}\text{Cu}_{24}\text{O}_{41}$ single crystal was investigated in the temperature range between 50 mK and 20 K, in magnetic fields up to 10 T, and as a function of time between 1 ms and 10^4 s.</p>
<p><u>Project achievements (and difficulties encountered):</u>⁵ (250 words max)</p>	<p>At least one of the heat capacity components is caused by the 1D CDWs. The other Schottky-contributions are probably caused by free Cu-spins on the 1D Cu-chains. This will be probed in the next experiments in September by the investigation of $\text{Sr}_2\text{Ca}_{12}\text{Cu}_{24}\text{O}_{41}$, where the number of free Cu spins on the 1D Cu-chains is drastically reduced.</p>
<p><u>Expected publications and dates:</u></p>	<ul style="list-style-type: none">• publications will follow the measurements which are performed at low and very low temperatures in Grenoble during the rest of 2012 or early 2013• suitable publication medium – Phys. Rev. B
<p><u>Submission date of user group questionnaire:</u></p>	<p>13/04/2012</p>

Completed Project Reports should be returned to MICROKELVIN Management Office (Leena.Meilahti@tkk.fi, Fax: +358 9 4512969).