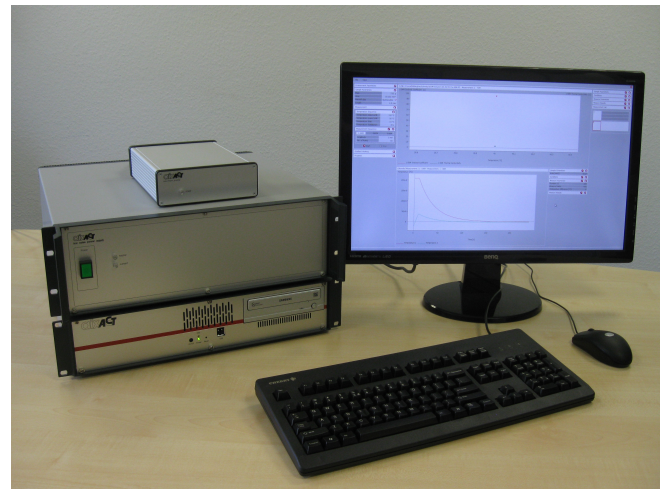


COMTESSE – System

The COMTESSE System was developed in a cooperation of aixACCT Systems GmbH and the DLR (German Aerospace Center). The task was to develop a measurement system, which is able to measure all important parameters of thermoelectric materials in one single temperature cycle. As a result of this process the COMTESSE System is a flexible and easy to use product for characterization of thermoelectric materials:

Highlights/Benefits

- Temperature dependent measurements of the most important thermoelectric material parameters in one single setup and within one temperature cycle:
 - thermal conductivity κ
 - electrical conductivity σ
 - Seebeck coefficient S
 - Harman ZT
- Reduced measurement time
- Reduced effort for sample preparation
- Compact hardware setup for easy usage
- Structured interface for quick data access
- Different user level – grants access to advanced measurement parameters

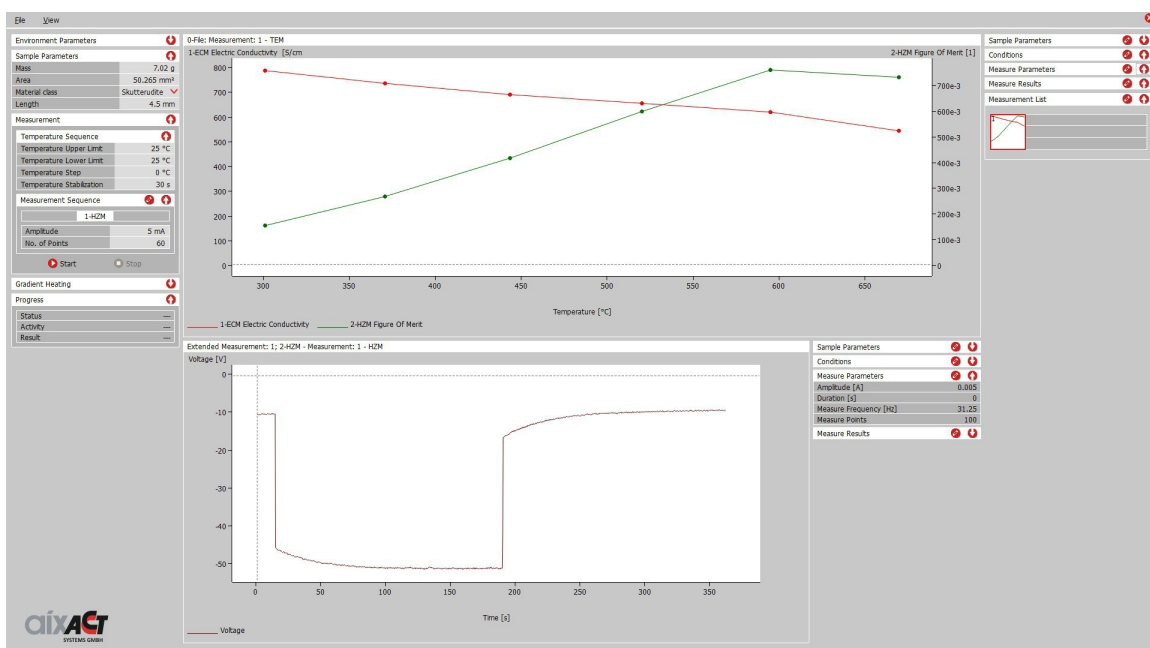


Measurements Principles – electrical conductivity and Harman ZT

- Drive sample with DC or AC current to determine electrical conductance
- AC measurements increase reproducibility and reliability

Measurement Principles – Seebeck and thermal conductivity

- Highly sophisticated COMTESSE amplifier grants maximum resolution

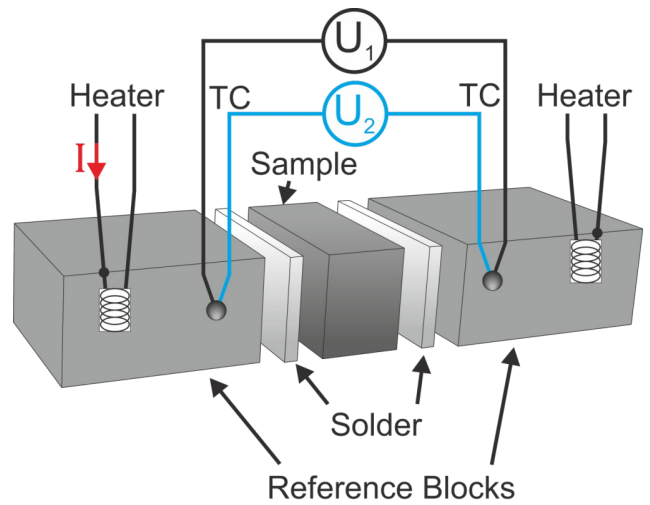


Measurement Setup

- Supports various sample geometries
- Symmetric setup allows to measure bidirectional for data verification

Specifications

- Measurement range (typical)
 - Seebeck coefficient: 10-1000 μ V/K
 - Electrical conductivity: 1-10000S/cm
 - Thermal conductivity: 1-20W/mK
- Measurement accuracy (typical)
 - Seebeck coefficient: $S < 5\%$
 - Electrical conductivity: $\sigma < 10\%$
 - Thermal conductivity: $k < 10\%$
 - Figure of merit: Harman $ZT < 20\%$



Cooperation



Supported by:



on the basis of a decision by the German Bundestag

Contact

aixACCT Systems GmbH
Talbotstr. 25
52068 Aachen
Germany

Phone: + 49 (0) 241- 4757030
Fax: + 49 (0) 241-47570366

E-mail: info@aixacct.com
www.aixacct.com