Economical Temperature Control System for Materials Analysis

- High precision turn key temperature control system
- Compatible with Novocontrol sample cells for dielectric and impedance spectroscopy
- Designed for easy, safe and fully automatic operation
- Wide temperature range: ambient to +400°C
- 0.1°C stability
- Includes temperature controller, power supplies, air jet heating system, GPIB communication system

NOVOTHERM

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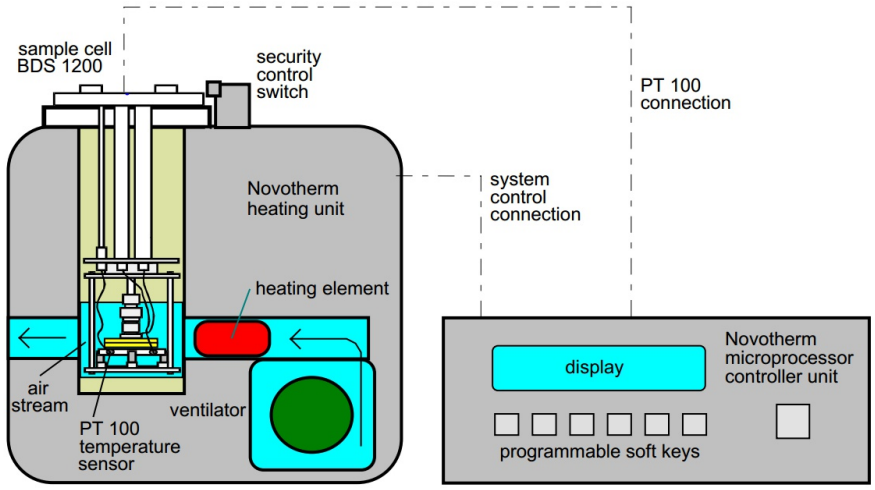
NOVOCONTROL Novotherm Temperature Control

Novotherm

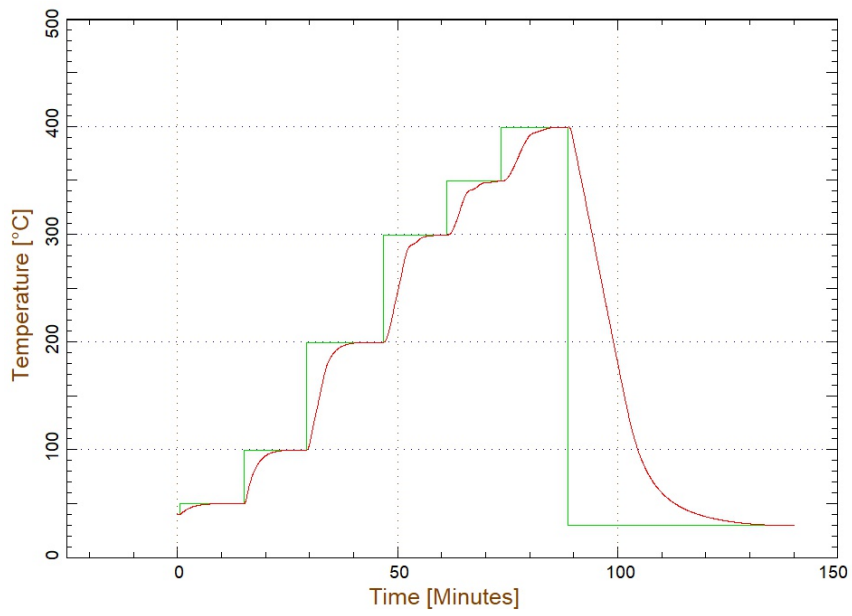
The Novotherm is a high quality turn key temperature control system for applications in materials research. The system has been developed to set or change the temperature of the sample under test with high accuracy and reproducibility. The system is modular and may be combined with any Novocontrol dielectric or impedance analyzer.
The Novotherm temperature control system is designed to provide easy, safe and fully automatic operation, enabling computer-controlled long time experiments over several days without supervision.



Principle of operation: The desired temperature (setpoint) is selected either manually at the controller front panel or by software via the IEC port. The sample temperature is measured by a Pt 100 temperature sensor at the lower electrode of the sample cell. A powerful fan produces an air stream flowing around the material in the sample cell. The controller adjusts the air stream temperature in order to minimise the difference between the current sample temperature (process value) and the setpoint.
The Novotherm system can be operated with the Alpha-A Active Sample Cell ZGS and the passive sample cell BDS 1200.

Applications

Various key materials properties, e.g., molecular relaxations, conductivity, phase separation, phase transitions, activation energy, glass temperature, rate of blending, purity, ageing, curing, either show marked temperature dependence or are only accessible through temperature-dependent measurements. A temperature control environment is, therefore, an essential part of any fully equipped system for the electrical characterisation of Temperature control thus extends the versatility of dielectric and impedance spectroscopy and increases the significance of the obtained results.



Stabilization characteristics of the sample temperature (process value) in dependence of the temperature set point. Set point step after sample temperature stabilization.

Features

- high quality turn key temperature control system
- temperate range: ambient to 400°C
- temperature ramps from 0.01°C/min to 20°C/min
- 0.1°C temperature stability and accuracy
- temperature overshooting after set point step typically < 1 °C
- stabilization times typically below 5 minutes (for 0.1°C stability)
- microprocessor controller with 24 bit ADC and IEC communication port
- fully supported by the Novocontrol WinDETA software for impedance measurement control and evaluation

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