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A 4.2K to 400K control temperature cycling system and integration with automatic measurement algorithms of temperature vs electrical transport parameters

Content :

An automatic controlled temperature cycling system has been designed and implemented to automatically set the temperature of the sample holder at different set points and wait at each set point until stabilization. The routines of hall effect and resistance measurement are integrated so as to be triggered at each set point after satisfactory temperature stabilization. The integrated temperature vs resistance and temperature vs hall effect measurement systems has been tested and used for complete temperature range. The system has exhibited good reliability and enhanced experimental efficiency. The measurement accuracy has been high. The details of the implementation of the complete measurement system will be presented.

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