SLOVENSKI STANDARD

oSIST prEN 61788-10:2005

01-april-2005

Superprevodnost - 10. del: Meritve kritiļ ne temperature - Merjenje kritiļ ne temperature kompozitnih superprevodnikov z metodo upornosti

Superconductivity -- Part 10: Critical temperature measurement - Critical temperature of composite superconductors by a resistance method

Supraleitfähigkeit -- Teil 10: Messung der kritischen Temperatur - Kritische Temperatur von Verbundsupraleitern bestimmt durch ein Widerstandsmessverfahren

Supraconductivité -- Partie 10: Mesure de la température critique - Température critique des composites supraconducteurs par une méthode par résistance

Ta slovenski standard je istoveten z: prEN 61788-10:2005

ICS:

17.220.20	Merjenje elektriļ nih in magnetnih veliļ in	Measurement of electrical and magnetic quantities
29.050	Superprevodnost in prevodni materiali	Superconductivity and conducting materials

oSIST EN 61788-10:2005 en

90/166/CDV

COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)

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Titre du CE/SC: Supraconductivité	TC/SC Title: Superconductivity	
Secretary: Ken-Ichi Sato Secrétaire:		
Also of interest to the following committees Intéresse également les comités suivants	Supersedes document Remplace le document 90/165/MCR	

Functions concerned
Fonctions concernées

☐ Safety / Sécurité ☐ EMC / CEM ☐ Environment / Environnement ☐ Quality assurance / Assurance qualité

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Titre CEI 61788-10 Ed.2: Supraconductivité – Mesure de la température critique – Température critique des composites supraconducteurs par une méthode par résistance

Title : IEC 61788-10 Ed.2: Superconductivity - Critical temperature measurement – Critical temperature of composite superconductors by a resistance method

Note d'introduction

Introductory note

At TC90 meeting in Argonne on September 3, 2004, it was agreed to circulate MCR and CDV of Ed.2 of 61788-10.

ATTENTION	ATTENTION
CDV soumis en parallèle au vote (CEI) et à l'enquête (CENELEC)	**Parallel IEC CDV/CENELEC Enquiry**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SUPERCONDUCTIVITY –

Part 10: Critical temperature measurement – Critical temperature of composite superconductors by a resistance method

FOREWORD

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International Standard IEC 61788-10 has been prepared by IEC technical committee 90: Superconductivity.

The text of this standard is based on the following documents:

FDIS	Report on voting
90/xxx/FDIS	90/xxx/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

Annex A is for information only.

The committee has decided that the contents of this publication will remain unchanged until xxxx. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

In addition to critical current and critical field, critical temperature is an important, basic property of materials that exhibit superconductivity. Also, critical temperature is practically important in applications of superconductors, since the higher the critical temperature is, the larger is temperature margin and the lower the cooling power consumption. Thus, standardization of the measurement method of critical temperature is quite beneficial to conductor users and is urgently required.

There are a lot of test methods to measure the critical temperature of superconductors, including the resistance method, d.c. susceptibility methods using a SQUID magnetometer and VSM (vibrating-sample magnetometer), a.c. susceptibility methods, specific heat methods etc.

Test methods, other than the resistance method, may generally be more sensitive and informative compared to the resistance method and may be appropriate for non-homogeneous materials or for thick films, thin films, bulks and powders, for which the resistance method is difficult to apply.

In this International Standard, however, the resistance measurement method is employed. This is because the resistance method is simpler and more reliable and can be applied to most of the composite superconductors in industrial use.

The outline of this standard was basically prepared by the Japan Fine Ceramics Association, a member institution of VAMAS (Versailles Project on Advanced Materials and Standards), TWA16 (Superconducting materials). The extensive revisions of the outline were primarily made by the New Materials Center supervised by the Japan National Committee and VAMAS.