IEC TR 62899-250

Edition 1.0 2016-12

TECHNICAL REPORT

colour inside

Printed electronics –
Part 250: Material technologies required in printed electronics for wearable smart devices

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 29.035.01; 31.180; 59.080.80

ISBN 978-2-8322-3794-6

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

PRINTED ELECTRONICS –

Part 250: Material technologies required in printed electronics for wearable smart devices

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a Technical Report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC TR 62899-250, which is a Technical Report, has been prepared by IEC technical committee 119: Printed electronics.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
119/104/DTR	119/123/RVC

Full information on the voting for the approval of this technical report 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.

A list of all parts in the IEC 62899 series, published under the general title *Printed electronics*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Recently, along with a variety of other expanding electronic technology applications, one in particular has gained a lot of attention from different angles. It is referred to as "wearable electronics". As the name of this new application implies, unlike other electronic technologies, these are to be attached or applied directly to the human body, such as traditional eyewear. Due to the particular characteristics of the human body, such as flexibility, this new technology requires a variety of new and unique capabilities, which other electronics applications do not need.

In order to realise such applications, electronic technologies are evolving in many areas. One area of special interest in electronic technology is a new process for producing devices themselves, called "printed electronics". Unlike conventional production processes called "subtractive processes", which use subtracting techniques to produce functional devices, printed electronics (PE) use an additive process using additional techniques by putting functional materials onto base materials.

Since these electronic technologies are new and rapidly evolving, there are no established means for their evaluation. This Technical Report intends to resolve this situation from certain angles and give some guidance for future standardization work in wearable electronics.

PRINTED ELECTRONICS –

Part 250: Material technologies required in printed electronics for wearable smart devices

1 Scope

This part of IEC 62899, which is a Technical Report (TR), explores a new technological field to establish standardization activities in TC 119 (Printed electronics) in particular, and to contribute to the development and market expansion of wearable smart device (WSD) technology.

2 Normative references

There are no normative references in this document.