



BSI Standards Publication

## **Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection - Glossary**

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Part 4-4: Piezoelectric materials - Single crystal wafers for surface acoustic wave (SAW) devices

## National foreword

This Published Document is the UK implementation of IEC TS 61994-4-4:2018. It supersedes DD IEC/TS 61994-4-4:2010, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/49, Piezoelectric devices for frequency control and selection.

A list of organizations represented on this committee can be obtained on request to its secretary.

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© The British Standards Institution 2018  
Published by BSI Standards Limited 2018

ISBN 978 0 580 52477 6

ICS 01.040.31; 31.140

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 November 2018.

### Amendments/corrigenda issued since publication

Date	Text affected
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# IEC TS 61994-4-4

Edition 3.0 2018-11

## TECHNICAL SPECIFICATION

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**Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection – Glossary –  
Part 4-4: Piezoelectric materials – Single crystal wafers for surface acoustic wave (SAW) devices**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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ICS 01.040.31; 31.140

ISBN 978-2-8322-6178-1

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**PIEZOELECTRIC, DIELECTRIC AND ELECTROSTATIC DEVICES  
AND ASSOCIATED MATERIALS FOR FREQUENCY CONTROL, SELECTION  
AND DETECTION – GLOSSARY –**

**Part 4-4: Piezoelectric materials – Single crystal wafers  
for surface acoustic wave (SAW) devices**

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 61944-4-4, which is a technical specification, has been prepared by IEC technical committee 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection.

This third edition of IEC 61994-4-4 cancels and replaces the second edition published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) the new terms and definitions given in IEC 62276:2016 have been taken into account;
- b) the general title has been changed according to the change in the title of TC 49 in 2009.
- c) the part title has been changed according to the title of IEC 62276:2016.

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

Enquiry draft	Report on voting
49/1283/DTS	49/1287/RVC

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

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

A list of all parts in the IEC 61994 series, published under the general title *Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection – Glossary*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

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

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

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

# PIEZOELECTRIC, DIELECTRIC AND ELECTROSTATIC DEVICES AND ASSOCIATED MATERIALS FOR FREQUENCY CONTROL, SELECTION AND DETECTION – GLOSSARY –

## Part 4-4: Piezoelectric materials – Single crystal wafers for surface acoustic wave (SAW) devices

### 1 Scope

This part of IEC 61994 gives the terms and definition for single crystal wafers for surface acoustic wave (SAW) devices representing the state of the art.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

There are no normative references in this document.

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1 Single crystals for SAW wafer

##### 3.1.1

##### **as-grown synthetic quartz crystal**

right-handed or left-handed single crystal quartz grown hydrothermally

[SOURCE: IEC 62276:2016, 3.1.1, modified – Notes 1 and 2 to entry have been removed.]

##### 3.1.2

##### **lanthanum gallium silicate**

##### **LSG**

single crystals described by the chemical formula  $\text{La}_3\text{Ga}_5\text{SiO}_{14}$ , grown by Czochralski (crystal pulling from melt) or other growing methods

[SOURCE: IEC 62276:2016, 3.1.5]

##### 3.1.3

##### **lithium niobate**

##### **LN**

single crystals approximately described by chemical formula  $\text{LiNbO}_3$ , grown by Czochralski (crystal pulling from melt) or other growing methods