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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 37946.2-2025

Replacing GB/T 37946-2019

**Test method for organic luminescence material - Part 2: Thermal
property**

有机发光材料测试方法 第2部分：热学性能

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Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

3.1 Thermal stability and composition of the material

3.2 Characteristic temperatures of thermogravimetric and differential thermogravimetric curves

3.2.1 Initial temperature initialtemperature

3.2.2 T_f

3.2.3

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 2 of GB/T 37946 "Test methods for organic light-emitting materials". GB/T 37946 has been published in the following parts.

- Part 2: Thermal properties.

This document replaces GB/T 37945-2019 "Test method for glass transition temperature of materials for organic light-emitting diode displays" Thermal Method" and GB/T 37946-2019 "Test method for thermal stability of materials for organic light emitting diode displays".

GB/T 37946-2019 is based on GB/T 37946-2019 and integrates the contents of GB/T 37945-2019. Compared with GB/T 37946-2019, in addition to the structural adjustment, In addition to the integration and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2019 edition);
- b) Deleted the term "thermal weight loss temperature of OLED materials" and its definition (see 3.2.7 of the 2019 edition);
- c) The purge air volume of inert gas in the thermobalance has been changed (see 4.2.1, 5.1 of the 2019 edition);
- d) The environmental conditions have been changed (see 4.3, Chapter 6 of the 2019

edition);

- e) The test conditions have been changed (see 4.4, Chapter 7 of the 2019 edition);
- f) The sampling volume has been changed (see 4.5.2, 8.2 of the 2019 edition);
- g) Added melting point test (see Chapter 5);
- h) Added the test of glass transition temperature (see Chapter 6);
- i) Added high temperature aging test (see Chapter 7);
- j) The test report has been changed (see Chapter 8, Chapter 10 of the 2019 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Technical Committee for Semiconductor Equipment and Materials Standardization (SAC/TC203).

This document was drafted by: China Electronics Technology Standardization Institute, Jilin Aolai Optoelectronic Materials Co., Ltd., Guangdong Aglaiya Optoelectronics Electrical Materials Co., Ltd., Beijing Dingcai Technology Co., Ltd., Ningbo Lumilan New Materials Co., Ltd., Gu'an Dingcai Technology Co., Ltd., Beijing Yunji Technology Co., Ltd., Wuhan Shangsai Optoelectronics Technology Co., Ltd., Nanjing Gaoguang Semiconductor Materials Co., Ltd., Weisipu New Materials (Suzhou) Co., Ltd.

Co., Ltd., Shaanxi Laite Optoelectronic Materials Co., Ltd.

The main drafters of this document are: Wu Yiran, Sun Feng, Zhao Junsha, Ma Xiaoyu, Pan Tonghen, Cao Kewei, Li Zhiyang, Li He, Sun Entao, Jin Wei, Shi Zeyuan, Chen Hua, Gao Xuefeng, Mu Guangyuan, Zhang Baoshuai, Zhuang Jianhong, Dong Shoucheng, Zhao He, Zhang Ying, Zhang Siming, Gao Yaoxiang, Qian Chao, Hang Deyu, Yu Danyang, Feng Zhen.

The previous versions of this document and the documents it replaces are as follows.

- First published in 2019 as GB/T 37946-2019;
- This is the second revision, incorporating GB/T 37945-2019 "Glass transition temperature of materials for organic light-emitting diode displays" Temperature test method differential thermal method".

Introduction

Organic light-emitting diode (OLED) is a self-luminous display technology, the core of which is to use organic material layer to emit light directly when powered on.

It has many advantages such as ultra-thin, ultra-wide viewing angle, flexible and rollable, high color gamut, and transparency. Organic light-emitting electron/hole functional materials

are organic material layers.

It is one of the core components of organic light-emitting display and plays a key role in organic light-emitting display.

Purity (main substance content, metal element content, halogen content), melting point, glass transition temperature, thermal stability, UV-visible absorption spectra, fluorescence spectra, phosphorescence spectra and the refractive index and extinction coefficient, chromaticity, brightness, luminous efficiency, brightness of the prepared organic light emitting diodes Aging is an important indicator of organic light-emitting materials. These indicators are crucial to production process control and product quality improvement. Therefore, it is necessary to determine Establish a test method for organic light-emitting materials.

GB/T 37946 aims to provide test methods for various properties of organic light-emitting materials and is intended to consist of four parts.

- Part 1: Optical properties. The purpose is to provide test methods for the optical properties of organic light-emitting materials.
- Part 2: Thermal properties. The purpose is to provide test methods for thermal properties of organic light-emitting materials.
- Part 3: Purity. The purpose is to provide a test method for the purity of organic light-emitting materials.
- Part 4: Electrical properties. The purpose is to provide test methods for the electrical properties of organic light-emitting materials.

Test methods for organic light-emitting materials Part 2: Thermal properties

1 Scope

This document describes the test methods for thermal properties such as thermal stability, melting point, glass transition temperature, and high temperature aging of organic light-emitting materials.

This document applies to the research and development, production, application verification, inspection and testing of organic light-emitting materials for various types of organic light-emitting displays.

2 Normative references

GB/T 25915.1-2021

GB/T 27761

JJG936

JJG1036

JJG1135

3 Terms and Definitions

The terms and definitions defined in GB/T 27761 and the following apply to this document.

3.1 Thermal stability and composition of the material

A thermal analysis technique that measures the relationship between the mass of a sample and temperature or time under program-controlled temperature and a certain atmosphere, used to study the relationship between the mass of a sample and temperature or time.

3.2.1 Initial temperature initialtemperature

Ti The temperature at which the temperature control program starts.

3.2.2 Tf

The temperature at which the cumulative mass change reaches its maximum value.

3.2.3

The first-order derivative curve of the thermogravimetric curve with respect to temperature or time, that is, the mass change rate curve.