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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 44355-2024

## Automatic determination of maceral group composition in coal -Image analysis method

煤的显微组分组含量自动测定 图像分析法

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# Table of Contents





## 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 is required.

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 by the China Coal Industry Association.

This document is under the jurisdiction of the National Technical Committee on Coal Standardization (SAC/TC 42).

This document was drafted by: China Coal Technology and Engineering Xi'an Research Institute (Group) Co., Ltd. and China Coal Science and Technology Research Institute Co., Ltd.

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Automatic determination of the content of microscopic components in coal Image analysis

## 1 Scope

This document describes a method for the automated determination of the microscopic grouping of coal using image processing techniques in a reflected light microscope.

This document is applicable to bituminous coal, lignite and anthracite of a single coal seam or a single type of coal for reference.

## 2 Normative references

GB/T 12937

GB/T 15588

GB/T 16773

GB/T 20733

GB/T 22063

GB/T 29298

## 3 Terms and definitions

The terms and definitions defined in GB/T 12937, GB/T 15588 and GB/T 20733 and the following apply to this document.

### 3.1 microscope camera

The image sensor is connected to the microscope through a dedicated interface and has the function of outputting microscope imaging digital signals, and is connected to the microscope through a data interface.

A camera connected to a computer that records the signal on a storage medium.

### 3.2 pixel

A physical unit on an image sensor that is able to sense light independently.

### 3.3 Motorized stage

A microscope stage that moves automatically along the X, Y, and Z axes controlled by a computer program.

### 3.4 Image acquisition system

A computer control system that can drive both the microscope automatic stage and the microscope camera.

Note. Includes automatic stage, image acquisition device and its driving software.

### 3.5 Microscopic image

A digital image taken by a microscope camera imaging a sample under a microscope objective.