

# Application Note

UV VIS

## Fields of Application / Industry:

- Chemistry / Polymer Industry
- Clinical Chemistry / Medicine / Hygiene / Health Care
- Cosmetics
- Electronics
- Energy
- Environment / Water / Waste
- Food / Agriculture
- Geology / Mining
- **Material Analysis**
- Metallurgy / Galvanization
- Pharmacy
- Refineries / Petrochemistry
- Semi-Conductor Technology
- Others

## 紫外可见光谱法测量玻璃样品的反射率

### 摘要:

根据物质的反射性能，不同物质的反射光是不同的。具有特殊抗反射涂层的玻璃样品对光的反射由其涂层的性质决定。

本文采用德国耶拿公司紫外分光光度 **Specord® 210 Plus** 和可变反射角度测量附件，对不同固体样品的反射率进行测量，结果表明，不同的固体样品，在不同的波长处，反射率有很大的差别，因此，通过使用可变角度反射附件，可用于测定具有反射涂层样品的厚度和固体样品的折射率。

## Reflectance measurements of glass samples

### Introduction

6 glass samples with a special antireflective coating have been analyzed concerning their reflective properties. The measurements were carried out with SPECORD® 210 PLUS and the variable angle reflectance attachment (Fig.1). This accessory is used for determining the layer thickness and refractive index of solid samples. The path of the light during the measurement is shown in Figure3.

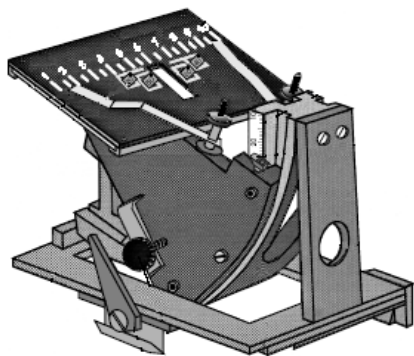
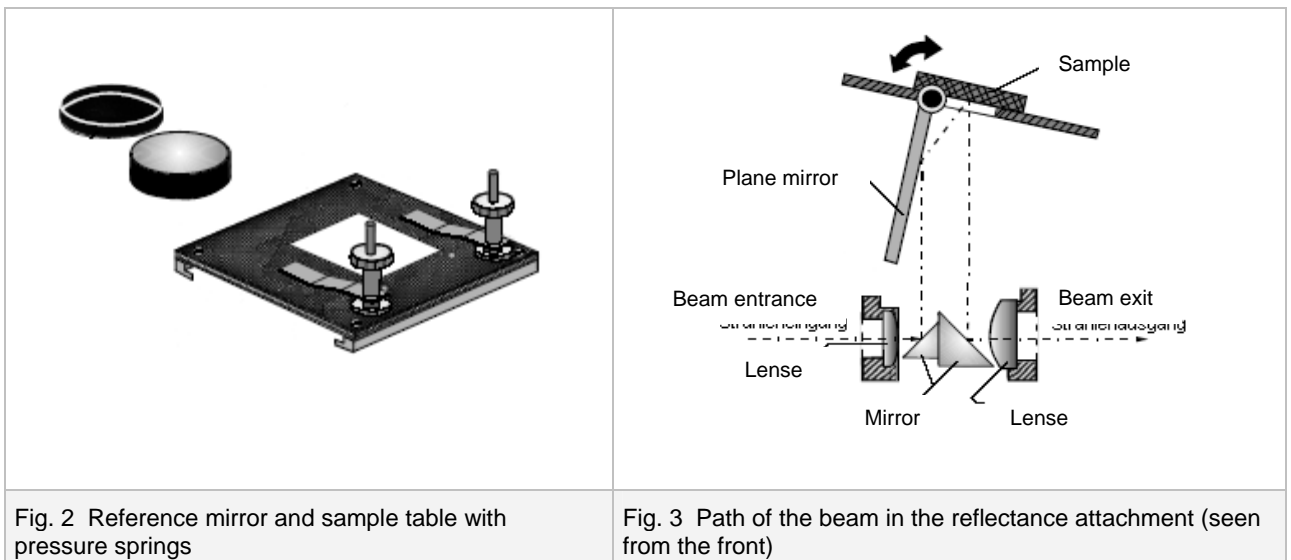


Fig. 1 Variable reflectance attachment with large table top



Procedure

The measurements were performed using the following parameter settings with an angle of 25°:

|                       |             |                         |               |
|-----------------------|-------------|-------------------------|---------------|
| <b>Display</b>        | Reflectance | <b>Measurement mode</b> | Spectral scan |
| <b>Correction</b>     | Reference   | <b>Range</b>            | 380 - 720nm   |
| <b>Slit</b>           | 4nm         | <b>Step size</b>        | 1nm           |
| <b>Lamp change at</b> | 320 nm      | <b>Speed</b>            | 20nm/s        |

By means of the knurled screw, the sample table was moved into the optimal position of 25° angle. Then the reference mirror for reference measurement was clamped to the table top using the sample pressure springs (Fig. 2). Subsequently the glass samples were fixed with the polished side to the table top in the same way and measured.

Results

The glass samples showed the following reflectance spectra:

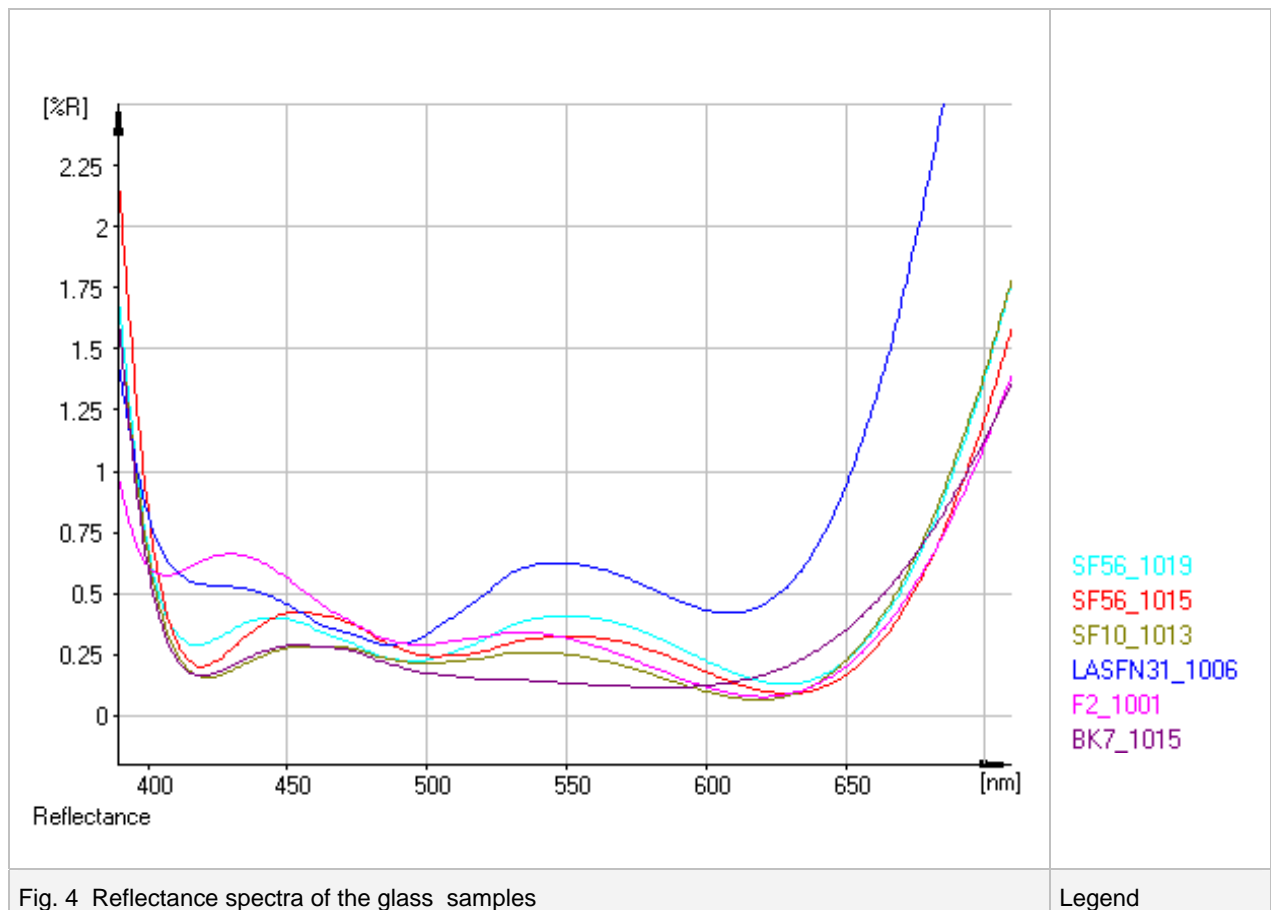


Fig. 4 Reflectance spectra of the glass samples

Legend

### Evaluation

By means of the spectra you can see that the glass "BK7\_1015" shows the least reflectance with a maximum reflectance value of 0.29% at 455nm whereas the samples "F2\_1001" and "LASFN31\_1006" show the highest reflectance of 0.66% at 430nm and of 0.63% at 547nm.

By using the variable reflectance attachment all reflectance spectra can be differentiated clearly and thus the glass samples concerning their reflectance properties.

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