

# New approach to application of the spectrophotometric system for determining the optical properties of turbid liquids

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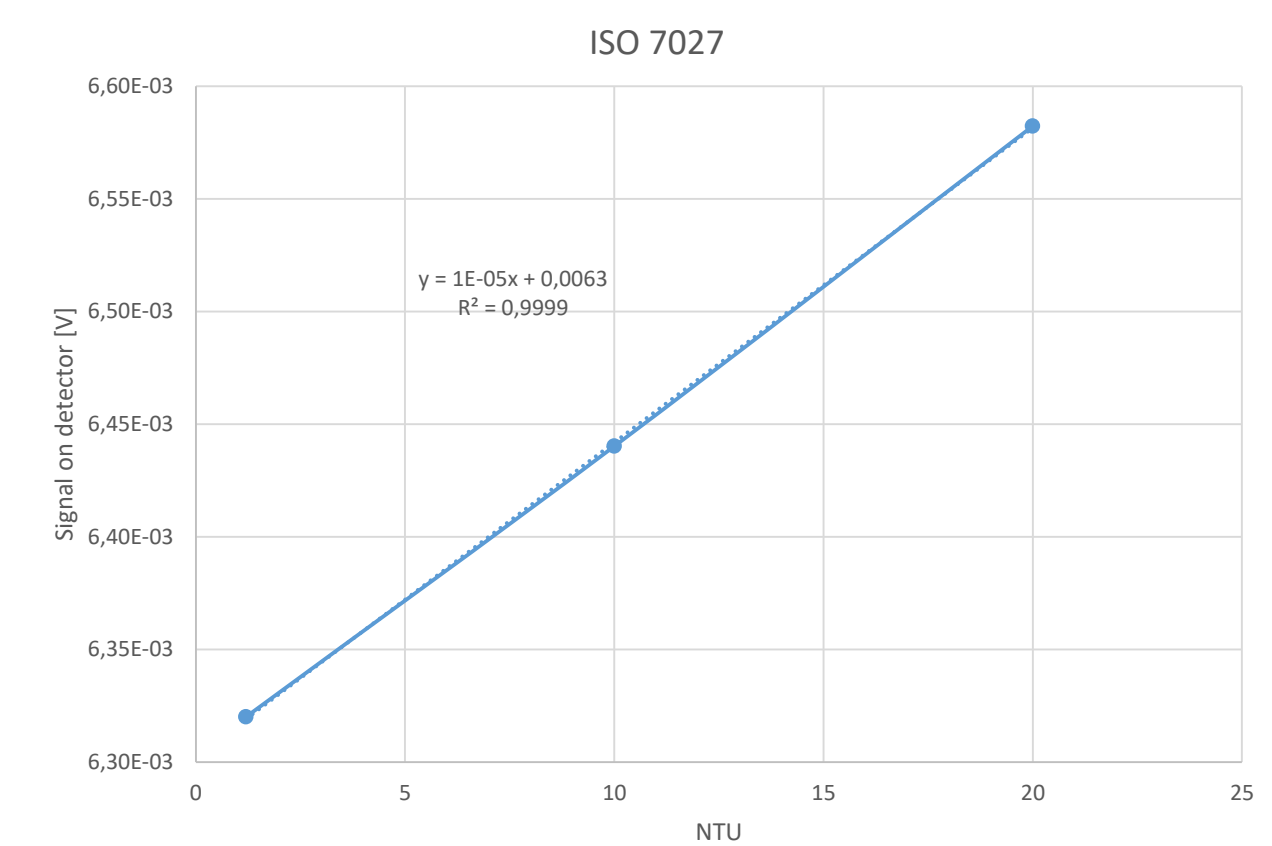
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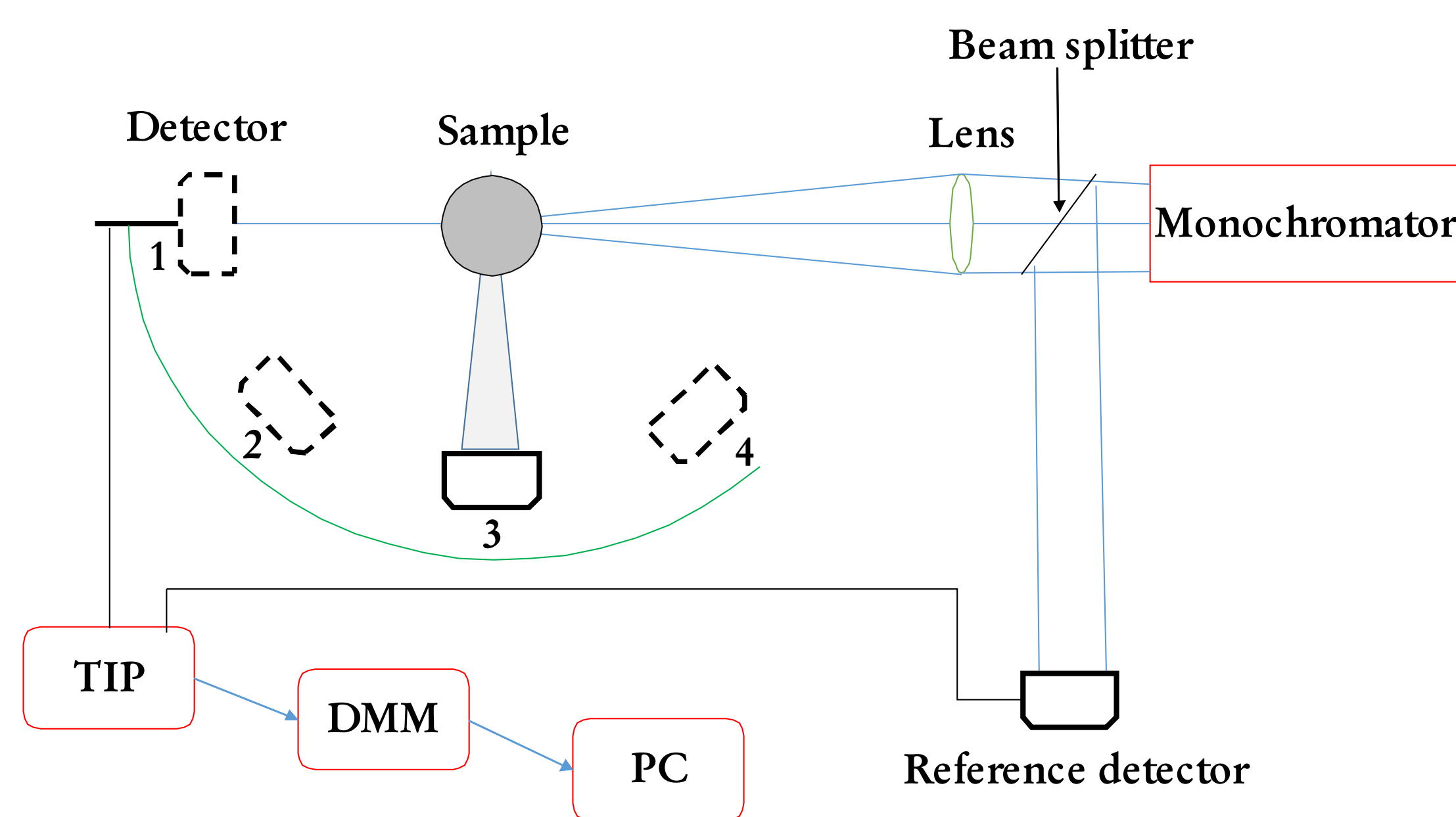
A poster describes determination of turbidity in solutions based on spectrophotometric system. We tried to determine the calibration curves for three recognized methods via standard reference material SRM (Formazin). The experimental results describe good linear agreement between absorbance and turbidity. This gives us the ability to trace the measurement results to the standard of regular transmittance.

## ISO 7027 Method

Civet diameter: 25 mm  
Source: 860 nm Monochromator SP DK 242  
Detector: Si photodiode  
Measurement angle: 90°, 180° - Transmittance mode  
**Better for bigger particles**

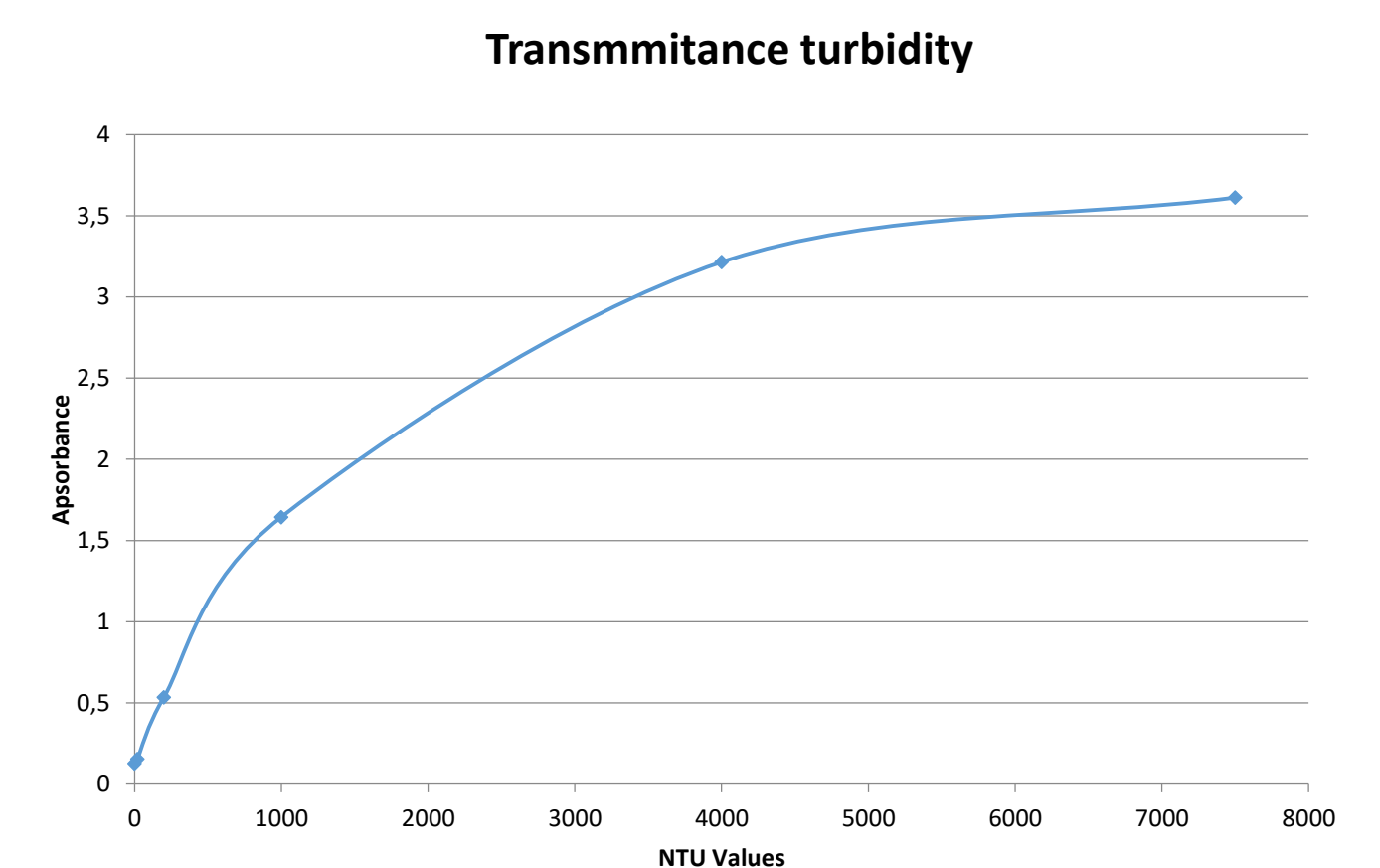
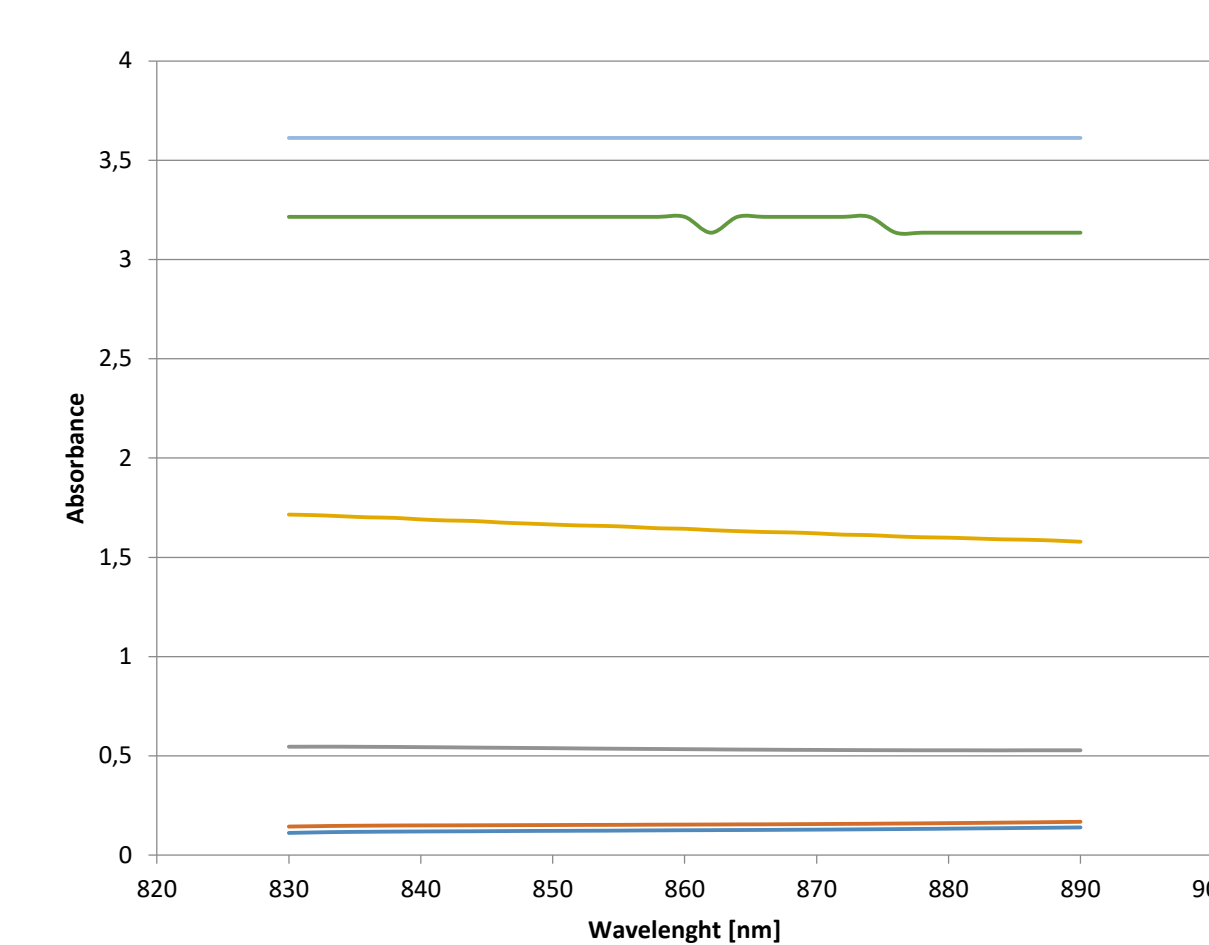


## Experimental setup



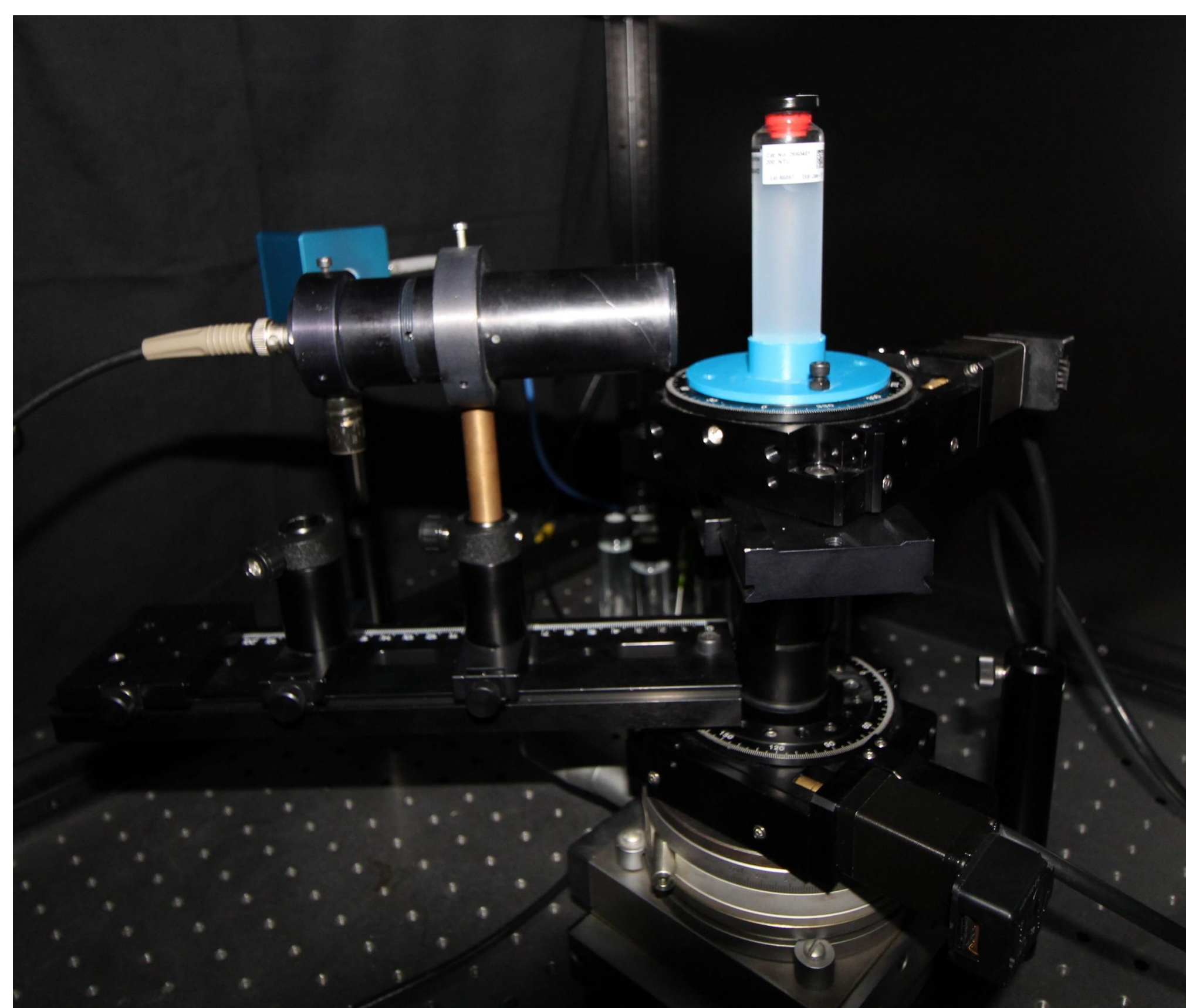
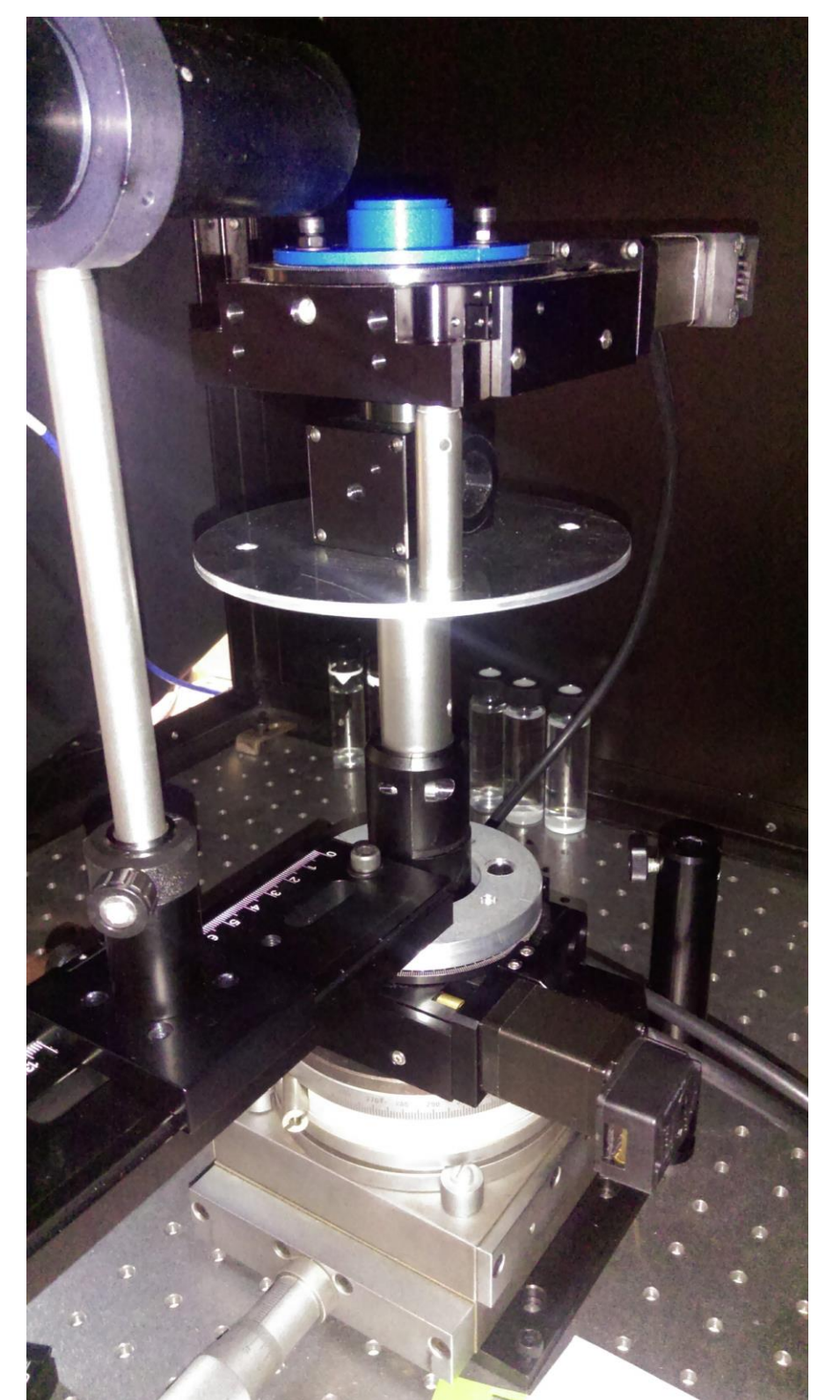
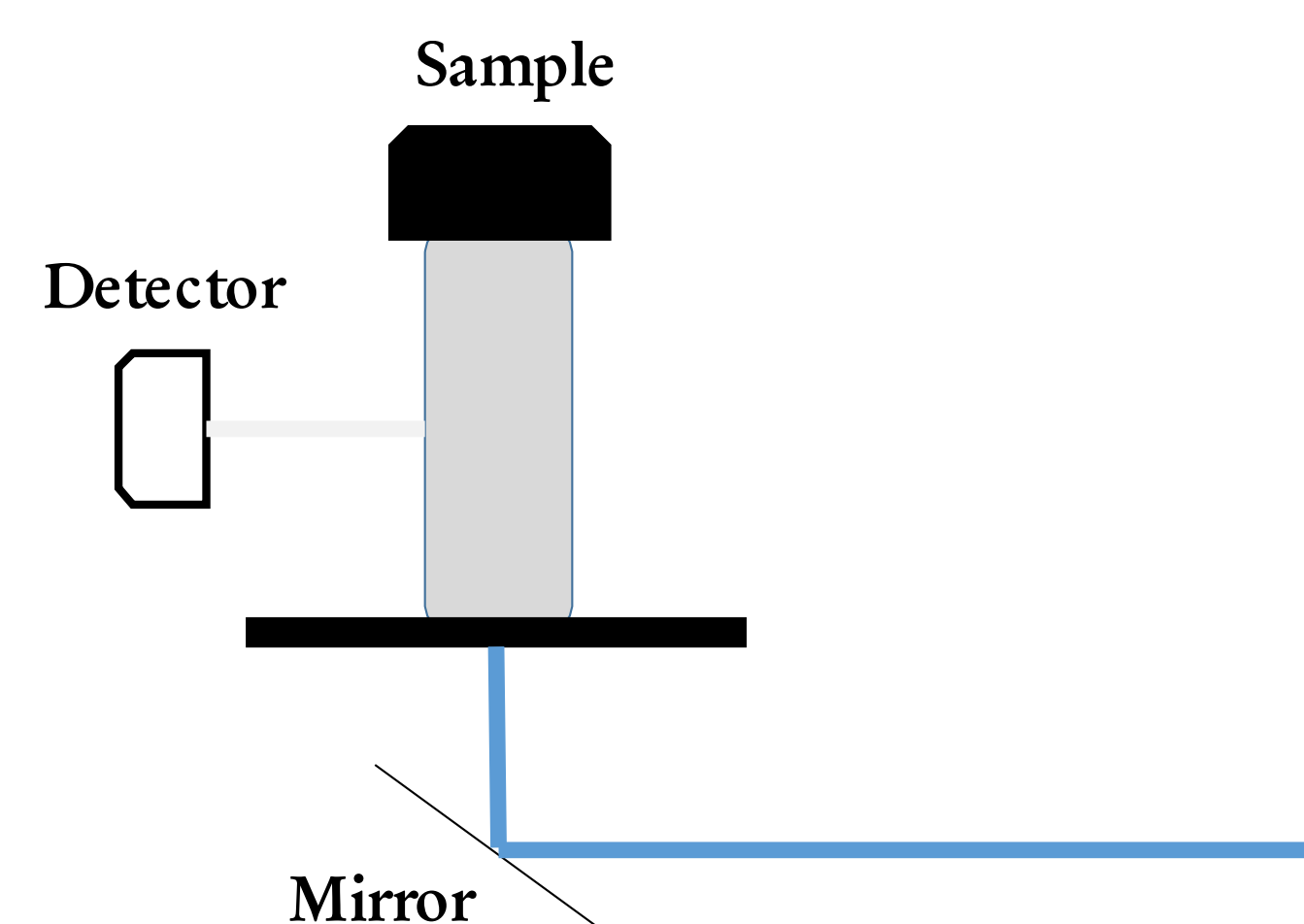
Graph 1. Principal scheme of realization turbidity measurement

## 180° - Transmittance mode

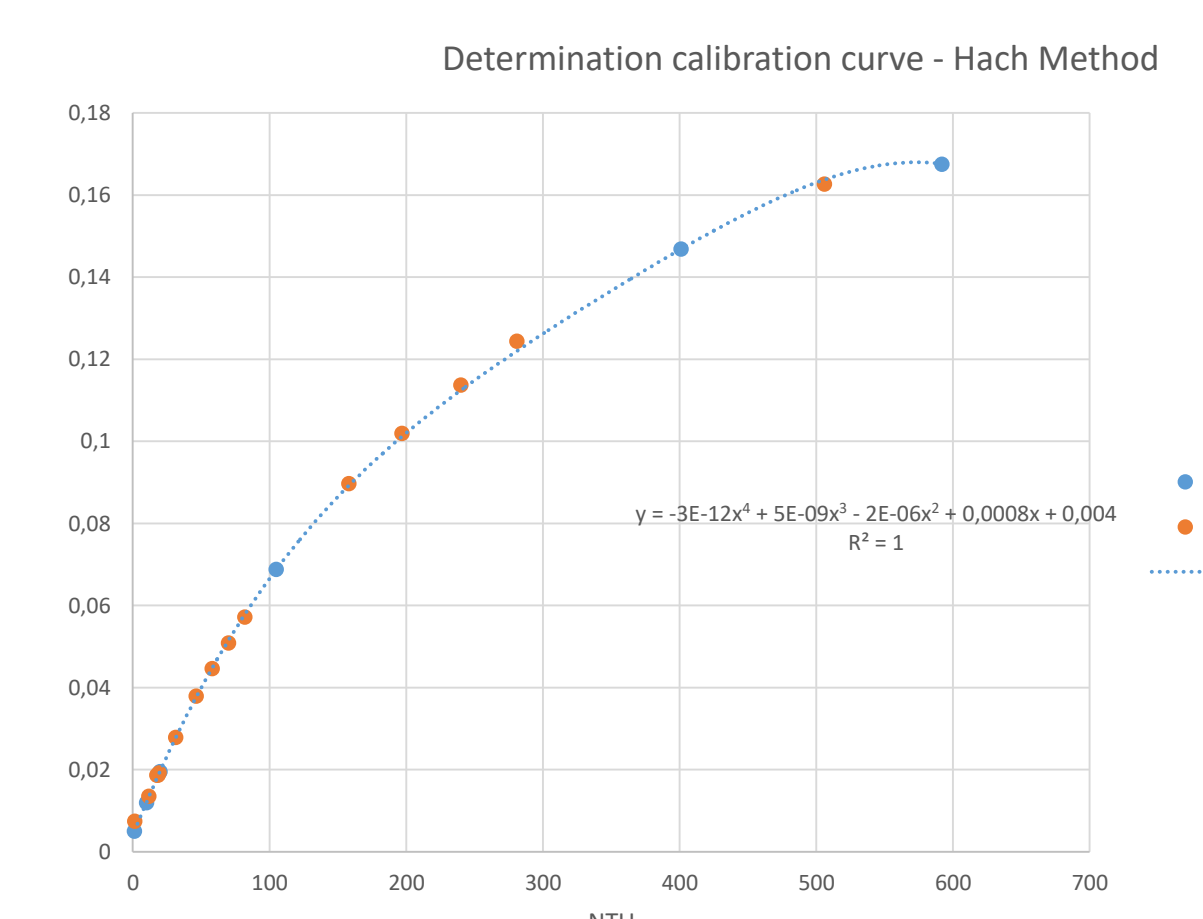
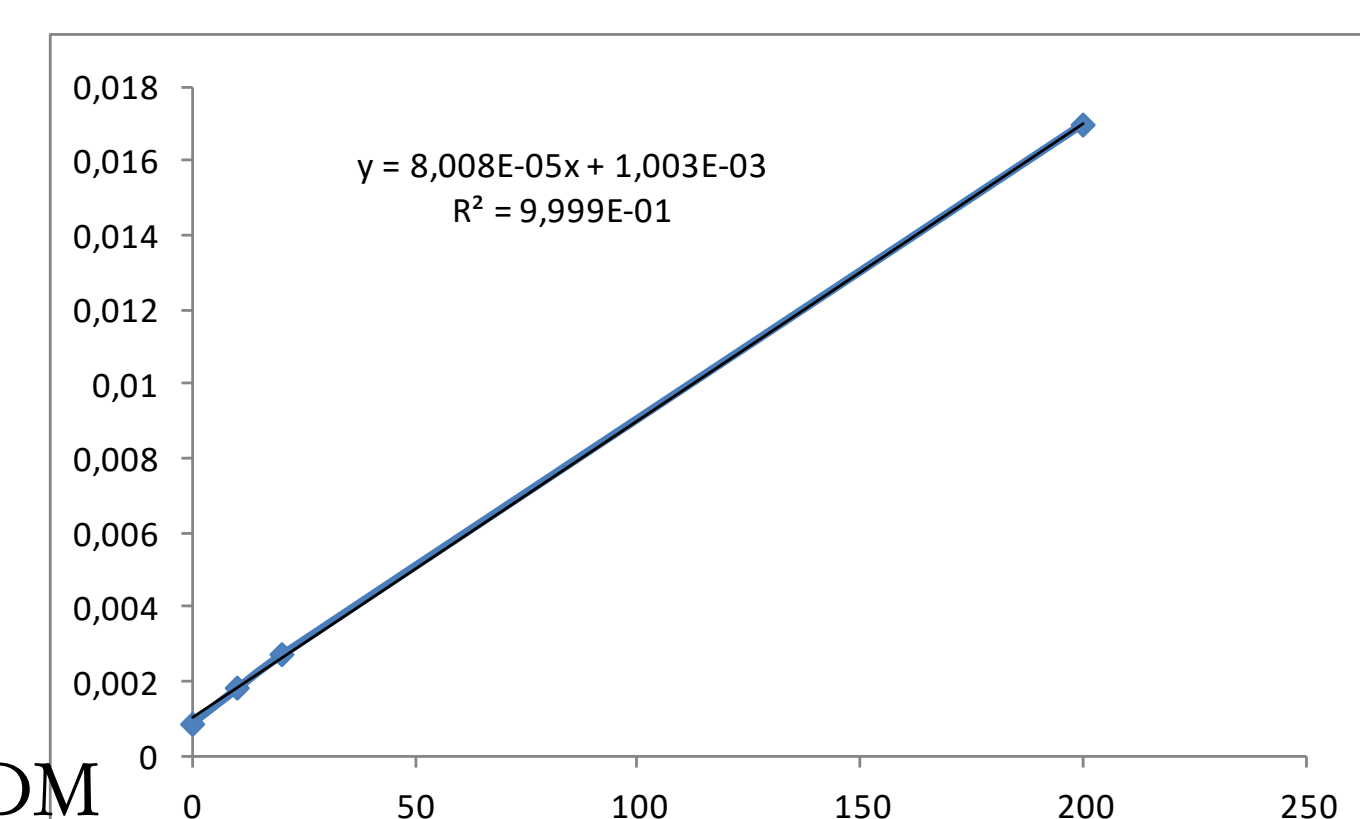


## HACH Method

Civet diameter: 18 mm  
Source: 860 nm Monochromator SP DK 242  
Detector: Si photodiode  
Measurement angle: 90°



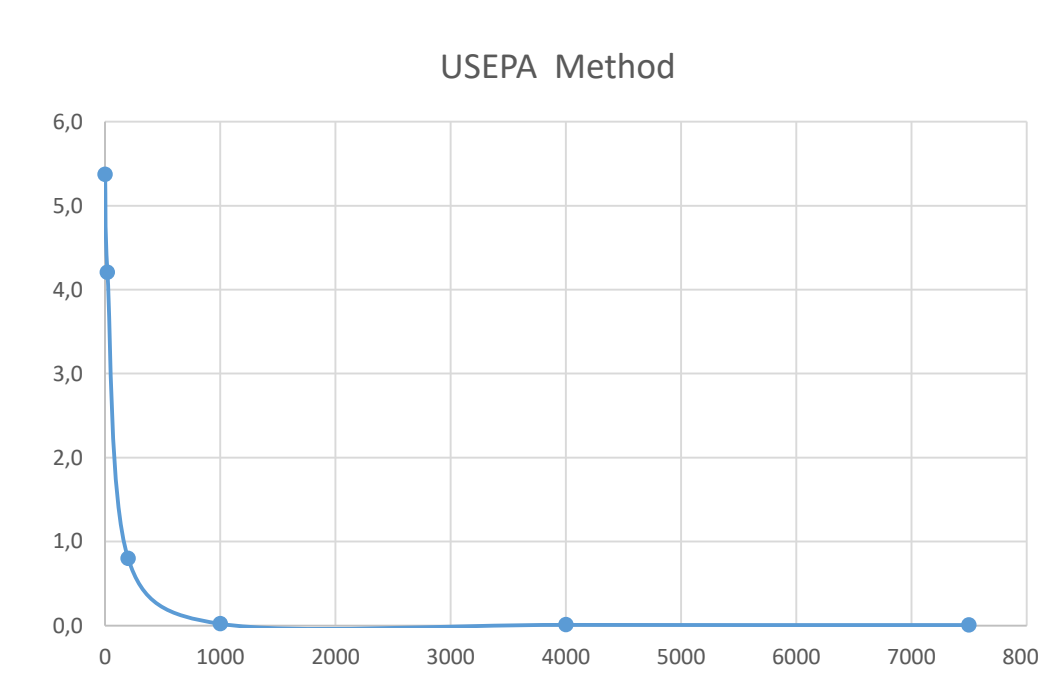
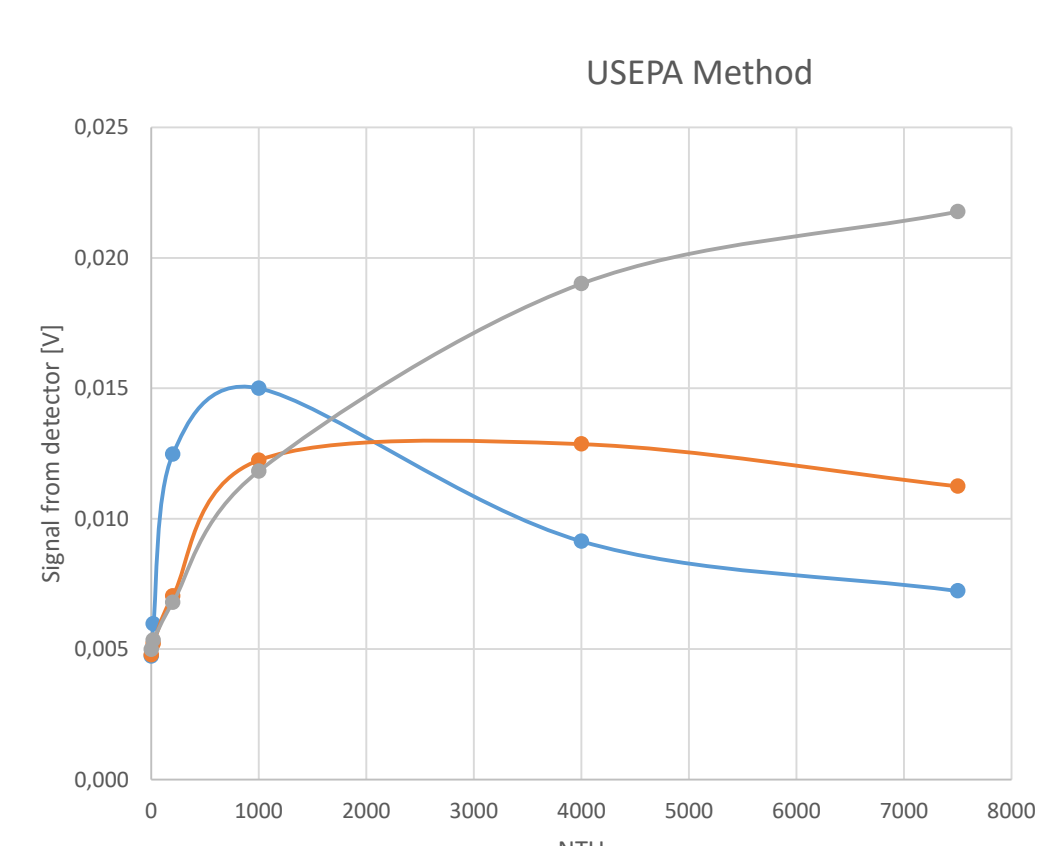
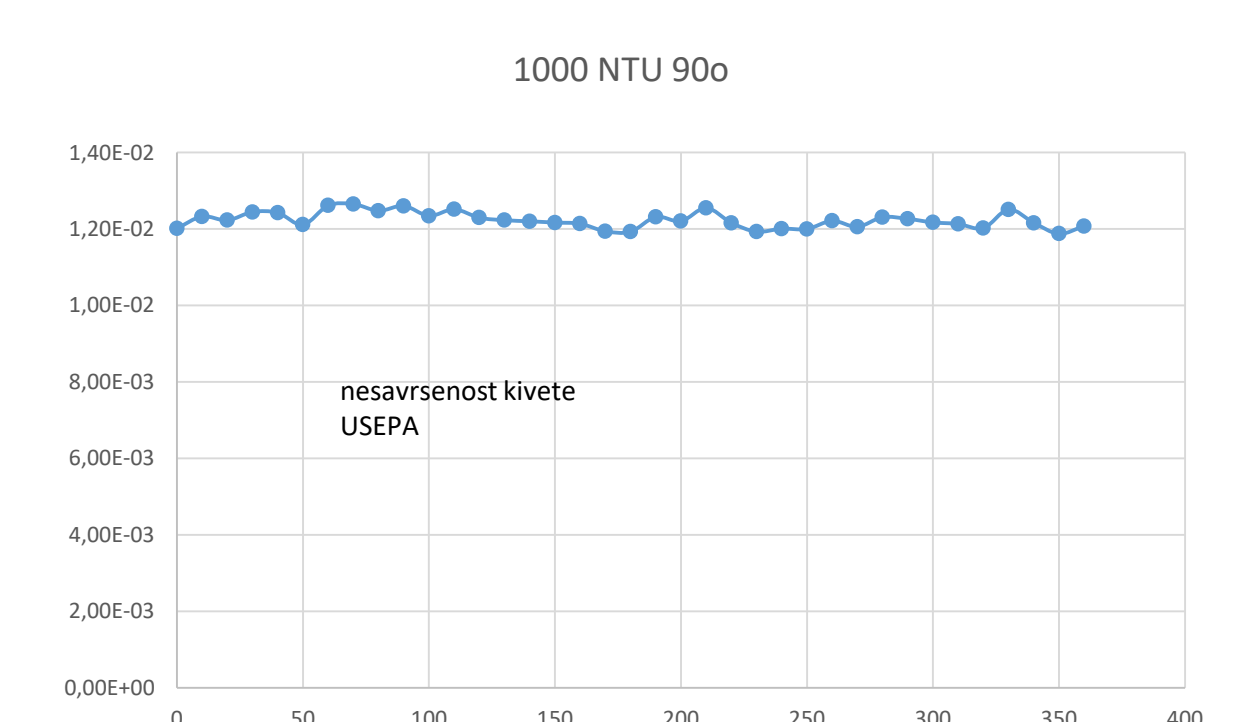
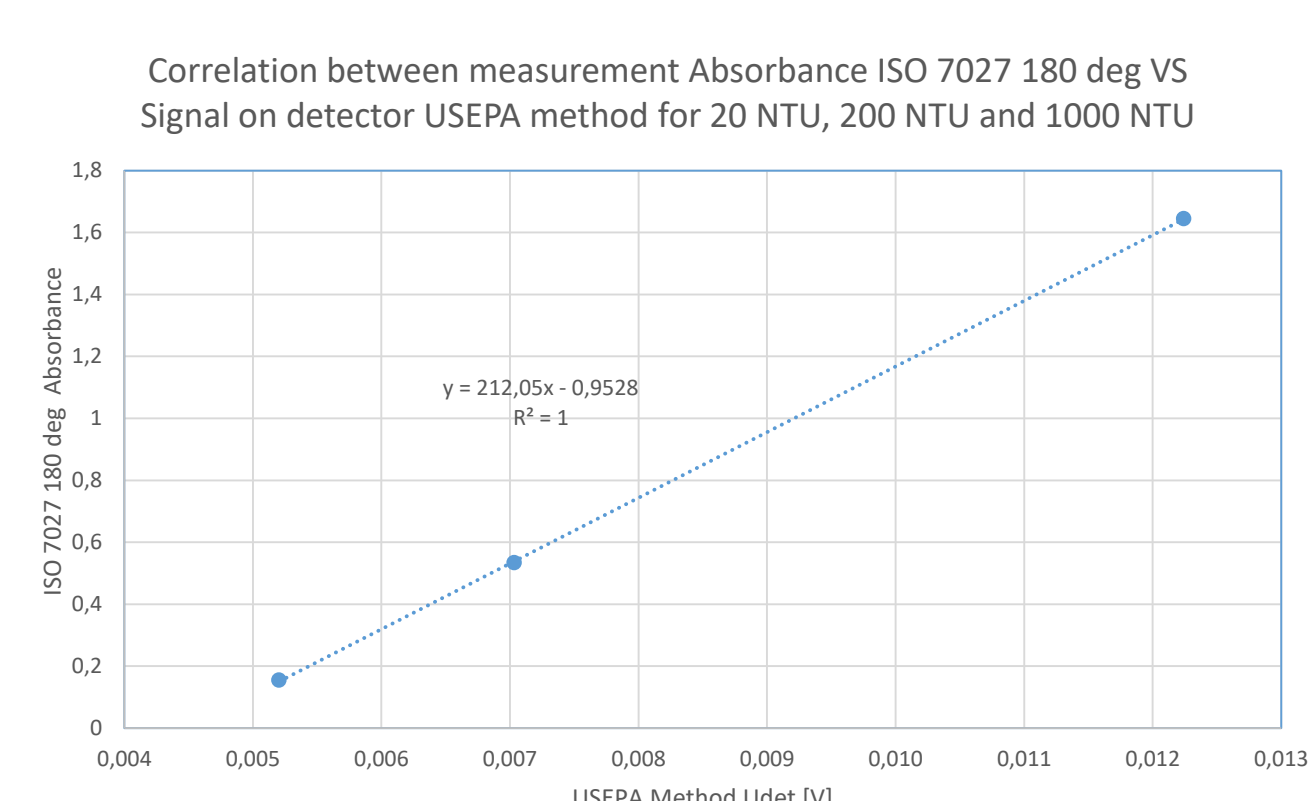
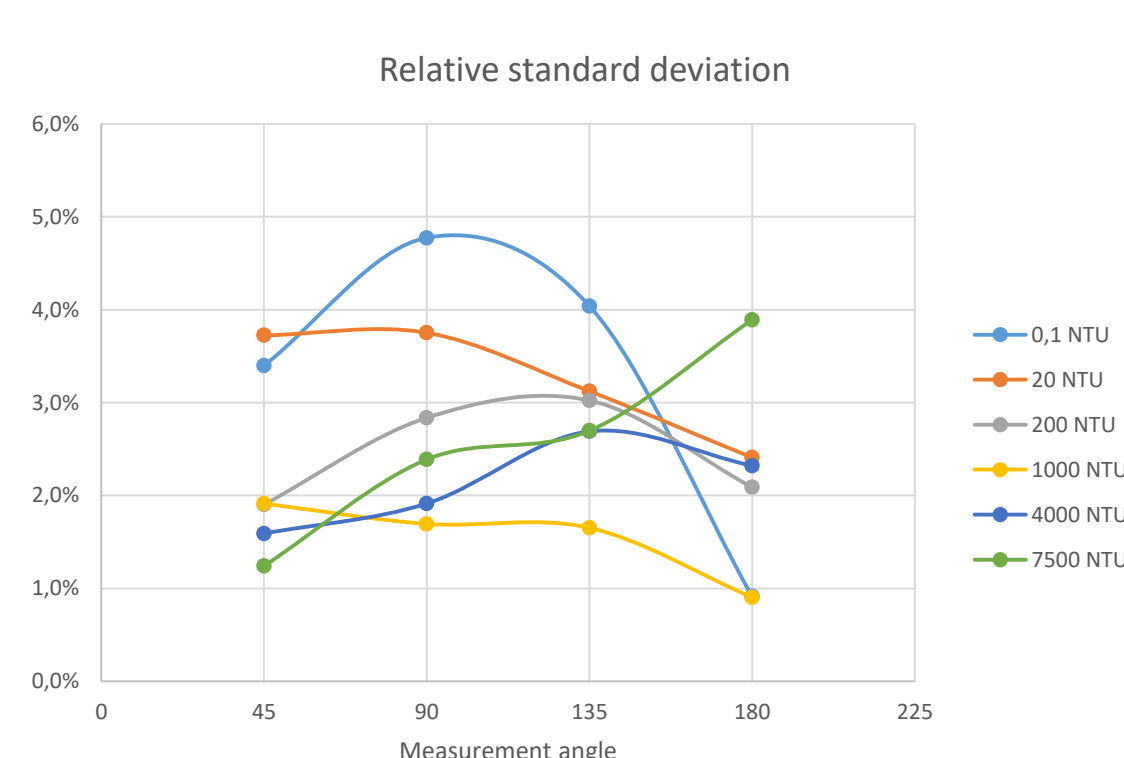
Pic 1. Measurement setup in Laboratory for photometry and radiometry in DMDM



## USEPA 180.1 Method

Civet diameter: 25 mm  
Source: Halogen lamp  
Detector: Si photodiode + V(λ) filter  
Measurement angle; 45°, 90°, 135°

**Better for small particles**



Developed and presented installation has for a purpose to improve metrology base and support accredited laboratories who does calibration of commercial turbidimeters.