

**workshop fee: 120 EUR**

With the increasing demands on glass products quality, glass defects fast determination and successful elimination is crucial for the glass technologists.

This workshop is an introduction to the topic of glass defect analyses offered by GS Laboratory. Bubble and solid glass defect analysis procedures are described and classification of the defects according to their sources is discussed.

## LECTURERS

Filip Janoš, GLASS SERVICE, a.s.

Martina Ježíková, GLASS SERVICE, a.s.

## SCHEDULE

### 14.00 - 15.45      **SESSION ON BUBBLES**

#### **Bubble Analysis Methods**

- Mass Spectrometry, analysis procedure, tiny bubble analysis

**Bubble Defect Sources** – classification according to the mechanism of bubble generation

- Batch decomposition and batch reaction
- Nucleation and glass reboil
- Electrochemical and chemical reactions
- Glass contamination
- Mechanically formed bubbles
- Refractory bubbles

#### **Discussion**

15.45 - 16.15      BREAK

### 16.15 - 18.00      **SESSION ON SOLID DEFECTS**

#### **Solid Defects Analysis Methods**

- Scanning Electron Microscopy coupled with EDS, analysis procedure

**Solid Defect Sources** – classification of the defects according to their source

- Batch (raw materials, recycled cullet)
- Crystallization (devitrification)
- Refractory materials (bricks, patches, insulation materials, ceramic welding)
- Other materials used in the furnace (tin, molybdenum electrodes, platinum, etc.)

#### **Discussion**

18.00                      **Final discussion per request**

