

# Sample Preparation Workshop Program

## (A) Sampling and Specimen Preparation -

- Sampling Theories and Limitations
- Sampling Methods
- Specimen Preparation Procedures – Crushing, Grinding, Splitting, Sieving, Mixing and Cryogenic Milling
- General Approach to Specimen Preparation

## (B) Pressed Powder Briquettes -

- Particle Size Effect and Infinite Thickness
- Choice of Binders and Effect on Analyte Intensity
- Particle Size and Pressure on Analyte Intensity

## (C) Sample Preparation for Liquids and Metals -

- Surface Preparation for Metals
- Re-melting Metal Sample
- Liquid Sample Cup
- Liquid Concentrate on Filter Paper

## (D) Borate Fusion Technique (I) -

- What is Borate Fusion?
- Why we Fuse?
- Type of Borate Fluxes
- Selection of Fusion Temperature
- Processing of Sulfides and Metals
- Maintenance of Pt-Crucible and Mould

## (E) Borate Fusion Technique (II) -

- Acidity of Samples
- Solubility of Oxides in Borate Fluxes
- Cracking of Fuse Beads
- Crystallization of Fuse Beads
- Releasing Agent – Interference and Absorption

## (F) Sample Preparations – Demonstrations Session

- Grinding – Rotary Swing Mill
- Cryogenic Mill
- Auto Electric / Gas Fusion Fluxer

- Sleeve-Die Briquetting Apparatus
- Metal Surface Polishing Apparatus

### (G) Sample Preparations - Hands-On Session

(Divided into Groups – each group will prepare the fused beads and pressed powder briquettes for two specimens and analyze by WDXRF or EDXRF)

- Grinding – Rotary Swing Mill
- Fused Beads – Electric / Gas Fusion Fluxer
- Pressed Powder Briquettes – Hydraulic Press & Sleeve-Die Set

