

Sample digestions for spectroscopic analysis – What do we need to know about our samples?

Most ICP-OES/MS measurements are performed with solutions. While instrument developments for ICP systems over the past few decades have resulted in impressive improvements in sensitivity, interference removal, isotope ratio precision, matrix-resistant plasma, etc., measurement results can be obtained with high precision. But the accuracy of the measurement results of solids, that require an aggressive digestion process, is not only influenced by the sample heterogeneity, but in particular by the effectiveness of the sample dissolution step.

During this short course I will discuss

- the pros and cons of digestion procedures for difficult to digest samples and minerals (mainly oxides and silicates)
  - acid digestion versus sintering/fusions
- the requirement to understand your sample
  - are there acid resistant (mineral) phases like zircon, chromite, graphite?
- the importance of method validation with matrix matched reference materials (RM)
- the importance of the composition of RM (as certified reference materials CRM and quality control materials QCM)
  - in cases “graphite” is not “graphite” or “chromitite” is not “chromitite”

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