

COURSE TITLE:

ENVIRONMENTAL ANALYTICAL TECHNIQUES 2.

COURSE DESCRIPTION:

Mineral phases (solid crystalline compounds) participating or forming in environmental processes – their properties and environmental role. Information types about and characterisation of solid phases (natural or manmade): geometry, texture, chemical composition (major, minor and trace element content, isotopic composition), crystal structural information and the analytical techniques by which one can collect these data.

In the second part, attention is focussed on more complex and sophisticated analytical methods: X-ray fluorescence spectroscopy (bulk chemical analysis) and scanning electron microscopy, as a method of local chemical analysis (including SE, BE and CL imaging, EDX and WDX analyses) are introduced.

LITERATURE:

Papp, G., Weiszburg, T.G. (ser. ed. 2000): EMU Notes in Mineralogy, Vol. 2: D.J. Vaughan, R.A. Wogelius (ed.): Environmental Mineralogy. Eötvös Univ. Press, Budapest, pp. 1–434.

Papp, G., Weiszburg, T. G. (ser. ed. 2004): EMU Notes in Mineralogy, Vol. 6: Beran, A., Libowitzky, E. (ed.): Spectroscopic methods in mineralogy. Eötvös Univ. Press, Budapest, pp. 1–661.

J. Dubessy, M.-C. Caumon and F. Rull (editors, 2012): EMU Notes in Mineralogy, Vol. 12: Raman spectroscopy applied to Earth Sciences and Cultural Heritage. pp. 1-504.

R. Jenkins, R. Snyder (1996): Introduction to X-Ray Powder Diffractometry. 432 pp. ISBN: 978-0-471-51339-1

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