Introduction to the Workshop NanoMin

Biogeochemical processes in modern sediments and soils are governed by the physico-chemical properties of mineral phases from which they are formed. Among them, sub-micron sized, particularly nanomineral solids, are common and widely distributed components in nature that comprise over 90 % of the reactive mineral surfaces. These particles, in the size range of 1 to 100 nanometers, of either abiotic or biotic origin, display unique structural, chemical and surface properties. Nanominerals and nanosized-mineral particles are important solids that govern the transport, deposition and the fate of the organic and inorganic compounds in nature, including the global carbon cycling and storage. Their reactivity is based on the processes of their formation, dissolution, and phase transformation, binding of organic and inorganic compounds, catalytic activity of their surfaces in modifying properties of chemical compounds, mutual interaction with other inorganic and organic particulates, and on their role in biomineralization processes at the nanoscale. The contribution that nanominerals and nanosized-minerals play in formation of sediments and soils and in geochemical processes in nature is still paltry investigated and should be better determined.

The purpose of this Workshop is to provide a comprehensive insight into the role of sub-micron, particularly nanosized mineral particles in the formation of recent sediments and soils/palaeosols and their significance in geochemical cycling of sedimentary organic materials and trace metals in sediments/soils/palaeosols of the Adriatic region. In addition, authigenic formation and morphogenesis of submicron sized and nanostructured mineral phases with their role in biogeochemical processes will be also addressed. The workshop will present the most significant research results that have been obtained within the project of the Croatian Science Foundation under the title *Nanominerals in sediments and soils: formation, properties and their role in biogeochemical processes* (NanoMin, 2504).

The workshop is organized by the Croatian Clay Mineral Society and it is sequel to the 9th Mid-European Clay Conference (MECC 2018), Zagreb, Croatia, September 17-21, 2018.

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