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**ABSTRACTS**

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## **CLAY MINERALS FROM THREE DIFFERENT GEOLOGICAL PERIODS IN LATVIA**

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Latvia is with clays rich country and there are a lots of clay deposits containing various kinds of clays with various mineral and chemical compositions. Clays are used mainly as a raw material for producing of pottery, building materials, fillers for dyes etc. Clays, especially their nanosize fraction, have become a raw material for nontraditional and more delicate purposes - they are being used in medicine, pharmacy etc. In the present work it is a must to know the structures and properties of these minerals in order to obtain high quality composites. Some clay may be more appropriate for specific goals than others due to its properties; therefore it is very important to carry out investigations to find the most appropriate ones.

Description and characterization of 3 different nanosized clay minerals from 3 different geological periods (Liepa clay from Devonian period, Saltiski clay from Triassic period and Apriki from Quaternary period) are summarized. The main minerals in these clays are illite and kaolinite. Nanosized clay mineral particles were obtained using sedimentation method. Comparison of mineralogical composition, BET nitrogen adsorption, Zeta potential, DTA analysis and FTIR spectra is given. XRD phase analysis results are very close to each other and shows that mineral of illite is more than that of kaolinite. BET nitrogen adsorption data shows that Apriki clay has the highest specific surface area (81 m<sup>2</sup>/g), whereas Saltiski clay has the lowest (43 m<sup>2</sup>/g) specific surface area. Zeta potential values for Apriki, Liepa and Saltiski clay are -40,9 mV, -49,6 mV and -43,0 mV, respectively. DTA analysis and FTIR spectra show similar tendencies for all 3 clay minerals.