

## **POROSITY OF THE DIFFERENT ROCKS IN RELATION TO CAPTURING/MOVING OF GASES AND LIQUIDS**

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The porosity and permeability of different materials is very important for description of their physicochemical properties and possibilities of further use of these materials. We have samples of Silurian shale, sediments, carbon-rich rocks, granitoids and some solid porous waste materials after thermal conversion available for research. Variability in the porosity of natural rocks and waste have been investigated in relation to the permeability of gases, e.g. CO<sub>2</sub> and water influence of erosion processes. Properties of studied samples are different from each other. Presence of organic matter causing microporosity is very low in all samples. The porosity and pore size distribution varying with the origin of materials and have been evaluated using a modelling of the results obtained by mercury intrusion porosimetry. The results have been intercompared and connection between the origin and porosity of material was observed. The total porosity values of selected samples ranged from ca. 0.05 % for granites to 55 % for waste porous materials. Intrusion/extrusion curves provide information about types of pores. Lower values of porosity show the connection with mesopores and are related with capturing of greenhouse gases, while higher values were caused predominantly by presence of macropores and large pores, which serves as pathways for permeability of gases and liquids and cause easier erosion of rock massifs.

**Acknowledgement:** This study was financially supported through research project GA21-26542S “Influence of postgenetic alterations of granites on their resistance to weathering processes in cultural heritage structures“ with funding provided by the Czech Science Foundation.