

Burszta-Adamiak, E., Lomotowski, J., Keszycka, M. Analyzing the Spatial Structure of Suspended Solids in Natural Waters. *Ochrona Srodowiska* 2009, Vol. 31, No. 3, pp. 65–68.

Abstract: The uses where laser diffractometry is applicable include measurements of the fractal dimensions of the suspended solids that occur in natural waters. Among the major benefits offered by this advanced method are the availability of quick measuring procedures and a high repeatability of the results obtained. Granulometric studies performed using a laser diffractometer enable simultaneous identification of the spatial structure of suspended solids particles. The authors have characterized the granulometric composition of precipitation water, melted snow, roof runoff and surface water runoff from the river Odra. They have demonstrated that the volumetric fractal dimension (D_3) of the suspended solids which were present in these waters took values close to 2.0 in the majority of instances. This is an indication that the particles of which the suspended solids are built display a spatial structure similar to the linear one, with a large amount of available space. The need has been emphasized for granulometric examinations of suspended solids within the framework of natural water monitoring, as well as during water treatment process control.

Keywords: Natural waters, suspended solids, fractal dimension, laser granulometer.