

**Lebkowska, M., Zaleska-Radziwill, M. Nanoparticles: Mode of Occurrence and Ecotoxicity. *Ochrona Srodowiska* 2011, Vol. 33, No. 4, pp. 23–26.**

**Abstract:** The paper reports on problems dealt with in ecotoxicological studies of nanoparticles. The types of nanoparticles and nanomaterials such as nanometals, nanoceramics, nanopolymers and carbon nanostructures are described in detail, and the interactions of nanoparticles with water and land organisms are characterized. Nanoparticles containing titanium, zinc, silver, cerium and fullerenes (C<sub>60</sub>) were tested for toxicity and the results obtained are discussed. However, the problem of how nanomaterials impact on living organisms and their habitat has not been sufficiently well recognized. This holds true not only for the bioavailability of nanoparticles and the mechanism governing their transport in the trophic chain. It has been emphasized that the use of nanoparticles – and this includes application in water treatment for human consumption – poses potential risk that they will penetrate the water distribution system. Furthermore, it has been stressed that the need for the development and standardization of reliable testing methods, as well as the necessity of establishing ecotoxicological data bases that would provide information about the nanomaterials already used and those being currently manufactured, has taken on a sense of significance. The widespread use of nanomaterials in engineering applications should be regarded as a spur to interdisciplinary research aimed at assessing potential health implications to the human organism.

**Keywords:** Nanomaterials, nanoparticles, toxicity, ecotoxicity, water treatment.