

4<sup>th</sup> International Conference on **Pollution Control & Sustainable Environment**  
&  
6<sup>th</sup> Edition of International Conference on **Water Pollution & Sewage Management**  
July 26-27, 2018 Rome, Italy

### Various ways of waste activated sludge recycling

Marina Vlasova, Abigail Parra Parra and Veronica González Molina  
Autonomous University of the State of Morelos, Mexico

The recycling of waste activated sludge (WAS) formed in the process of biological purification of sewage is an urgent ecological problem. In the present work, we consider various technological schemes for the utilization of WAS, namely: obtaining carbon adsorbent in the framework of low-temperature carbonization of WAS; synthesis in the framework of low-temperature sintering of WAS- glass mixtures of composite adsorbent granules consisting from carbon and porous glass; low-temperature synthesis of foam glass from mixtures WAS-a fusible comminuted glass; synthesis of porous brick products in water-saving mode when using WAS with high humidity; production of porous carbonized ceramics using WAS and firing under oxygen deficiency conditions. The obtained results showed that on the basis of the developed technologies it is possible to obtain active adsorbents for water purification from dyes, for filtration of sewage from suspensions and brick products of various porosities with good mechanical properties.

#### Recent Publications

1. Vlasova M, Bykov A, Kakazey M, Márquez Aguilar P A, Melnikov I, Rosales I and Guardian Tapia R (2016) Formation and properties composite ceramics  $TiB_2$ -Ni. *Science of Sintering* 48:137-146.
2. Kakazey M, Vlasova M, Juarez-Arellano E A and Torchynska T (2016) Defect states and morphological evolution in mechanically processed ZnO + xC nanosystems as studied by EPR and photoluminescence spectroscopy. *Royal Society of Chemistry (RSC)* 6:58709-56722.
3. Kakazey M, Vlasova M, Gomez-Vidales V, Angeles-Pascual A and Basuk VA (2017) Formation of carbon nanodots with different spin states in mechanically processed mixtures of ZnO with carbon nanoparticles: an electron paramagnetic resonance study. *Physical Chemistry Chemical Physics* 19:3670-3678.
4. Vlasova M, Fedotov A, Mendoza Torrez I, Kakazey M, Komlev V and Marquez Aguilar P A (2017) Mechano-synthesis of hydroxyapatite-ferrite composite nanopowder. *Ceramics International* 43:6221-6231.
5. Parra Parra A, Vlasova M, Márquez Aguilar P A and Tomila T (2017) Peculiarities of a glass-sludge mixture subjected to low-temperature treatment. *Science of Sintering* 49:207-224.

#### Biography

Marina Vlasova has completed her PhD in 1967 with a speciality in Solid State Physics. In 1996 she completed her DSc with a speciality in Chemical Sciences. Her major research interests lie in the region of synthesis of oxide and oxygen-free powders, their sintering, phase formation and study the properties of ceramic materials. She is a Research Professor in Autonomy University of State Morelos, CIICAp. She directs the Laboratory of Advanced ceramics. She has published more than 170 papers in reputed journals, seven inventor's certificate.

vlasovamarina@inbox.ru