NAPLES, ITALY 6-10 JULY
NANOSMAT Naples
16th International Conference on Surfaces, Coatings, and Nanostructured Materials

16th International Conference on Surfaces, Coatings and Nanostructured Materials
www.nanosmat.org/special.html

ABSTRACT:

The Challenge of the Bioactive Carbon Nanomaterials in Biomedical Applications

K.A. Mitura [1,2]

[1]Faculty of Mechanical Engineering and Power Engineering, Koszalin University of Technology, Śniadeckich 2, Koszalin 75-453, Poland
[2]Technical University of Liberec, Studentská 1402/2, 461 17 Liberec 1, Czech Republic.

Nanotechnology is playing an increasingly important role in various industries, including the food sector. One of the innovative applications is nanodiamonds, which can significantly improve the properties of food packaging.
Nanodiamonds are the carbon nanoparticles with a diamond structure, the size of which does not exceed several nanometers. They have unique properties, such as high hardness, chemical resistance, and the ability to conduct heat. Due to their unique structure, nanodiamonds can be used in many innovative technologies, including medicine, electronics, and the food industry. Adding nanodiamonds to packaging materials such as polymer films increases their mechanical strength and resistance to damage. This allows for longer storage of food products without the risk of damaging the packaging. Nanodiamonds can improve the barrier properties of packaging by limiting the penetration of oxygen and moisture. This is crucial in protecting food from oxidation and spoilage. Nanodiamonds are an example of modern technology that has the potential to significantly improve food quality and safety while contributing to environmental protection.

K.Mitura, K.Wyrębski, P.Zarzycki, (2017), Bioactive food packaging with nanodiamond particles manufactured by detonation and plasma-chemical methods in : Nanotechnology in Food Industry, Vol. 7, chapter 9, ed. A.M. Grumezescu, ELSEVIER. pp. 295-328. http://dx.doi.org/10.1016/B978-0-12-804302-8.00009-1.