

## MAGNETIC NANOPARTICLES IN BIOLOGICAL SYSTEMS

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The most common magnetic nanoparticles in animate and inanimate nature are magnetite (Fe<sub>3</sub>O<sub>4</sub>) and maghemite ( $\gamma$ -Fe<sub>2</sub>O<sub>3</sub>). They play an important role in functionalizing living system. These nanoparticles cause formation of magnetic properties in bio systems and the emergence of a wide EPR signal in plants and that was demonstrated by us for the first time [1,2].

We study the biosynthesis and generation of metallic nanoparticles in some plant species (*Punica Granatum*, *Olea Europea L.*, etc.). Our studies are carried out in two directions: biosynthesis of nanoparticles are carried out by using plant extracts and metallic salts. At the same time in living systems are studied bio generation of nanoparticles and determine mechanism of this event.

Results of research conducted with plants proves that stress factors has a stimulating effect and plays a role in the formation of the magnetic nanoparticles in plants. And this effect can be applied to synthesis of functional iron oxide nanoparticles used in different fields. Researches carried out by EPR spectroscopy method showed that this method is very promising for the detection of the formation of iron oxide magnetic nanoparticles in biological systems and can give new information for biomonitoring the degree of contamination of plants and environmental assessment.

### References.

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