Electromagnetic fields (EMF) are classical fields produced by electric charges. Electric and magnetic fields arepart of the spectrum of electromagnetic radiation which extends from static electric and magnetic fields, through radiofrequency and infrared radiation, to X-rays, but the most common and moving the needle impact has a radiation in radio-frequencies spectrum. Why is there a growing interest of EMF topic? Why does EMF raise anxiety and so much doubts?

EMF of all frequencies represent one of the most common and fastest growing environmental factor which is present in everyday life of human and animals. Nowadays, all living organisms are exposed to various degrees of EMF and permitted parameters of electromagnetic radiation (EMR) in many countries are still rising, because of increasing of technology advances.

As a matter of fact, there are numerous researches about the influence of EMF on living organisms, but the results of these experiments are still not unambiguous and there is a lack of research which touches this theme in-depth. That's why the research which consider wide spectrum of frequency and other parameters of EMF is necessary for expanding knowledge about EMR impact on organisms.

In this research, spiders will be used as model organisms, because they are present in every environment in all continents: from natural to urbanized and thanks to this fact, they could be used as bioindicators of EMF pollution in the future. The common house spider (*Parasteatoda tepidariorum*) individuals will be divided into experimental groups depending on the stage of development, EMF frequency and time of exposure. After EMF treatment stress markers will be assayed, including the parameters of oxidative stress, especially the level of oxidative stress in cells and heat shock proteins level, the concentration of malonaldehyde and reduced glutathione, the level of antioxidative enzymes with expression of genes encoding these enzymes. Next, the level of apoptosis and DNA damages will be investigated. These paramaters are conservative, so it will be possible to continue these research on other organisms, also on humans's cells.