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## EMPs Generation and Biological Influence Studies of Emitted Waves

High-power laser interaction with materials and particularly with thin metallic films is starting to get more applications not only in fundamental physics studies but also in scientific and (quite soon) medical applications. Thus, particle acceleration using such interactions is becoming more and more an alternative to the classic accelerators due to costs, sizes and even performances in some particular cases. However, there are side-effects which should be taken in consideration, as the possibility of producing strong electromagnetic pulses (EMP), X-ray, and so on. Even if EMP is mostly known as sometimes dangerous for the used devices, in some cases it might become dangerous for peoples as well. If there are some data on the EMP influences on various electrical devices, influences on the leaving organisms are still scarce and it might have to be considered while the laser power will further increase in the experiments and future applications.

Using PW laser facility from CETAL (NILPRP, Magurele) several metallic materials were irradiated with 800 nm (+/- 25 nm) wavelengths, short (~ 35 fs) pulse duration and several joules energy per pulse. Emitted spectra and corresponding intensities were monitored using wide-band antennas and high-frequency oscilloscopes. Using some generators, some influences on living cells for "long time" irradiation from such experimental 'side-effects' were investigated and are presented together with some interpretation of their generation and possible absorption mechanisms. Some discussions on the generation mechanisms together with the possible protection measures are also discussed.

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