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Musical Tesla Coil with Faraday Box Controlled by a GNU Radio

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Abstract : In this work, the implementation of a Matlabcontrolled Musical Tesla Coil and external audio signals was presented. First, the audio signal was obtained from a mobile device and processed in Matlab to modify it, adding noise or other desired effects. Then, the processed signal was passed through a preamplifier to increase its amplitude to a level suitable for further amplification through a power amplifier, which was part of the current driver circuit of the Tesla coil. To get the Tesla coil to generate music, a circuit capable of modulating and generating the audio signal by manipulating electrical discharges was used. To visualize and listen to these discharges, a small Faraday cage was built to attenuate the external electric fields. Finally, the implementation of the musical Tesla coil was concluded. However, it was observed that the audio signal volume was very low, and the components used heated up quickly. Due to these limitations, it was determined that the project could not be connected to power for long periods of time.

Keywords : Tesla coil, plasma, electrical signals, GNU Radio
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