The Response of Field Effect Transistors

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There is a well known gadget in field of electronics where a Junction Field Effect Transistor (JFET) moderates the flow of current to an LED by responding to an external electric field. The goal of this study was to determine whether the JFET'S response to electric fields is representative of the inverse square law given by Coulomb's Law. I conducted this study by replacing the LED with an ammeter to record the flow of current as a charged object was brought closer to the JFET. Current flow at systematically set distances from the JFET and the charged oject were recorded. This experiment was conducted inside a Faraday cage to eliminate any stray electric fields. A sigmoidal function results when graphing current as a function of distance.

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