

# Metamaterials based Compact Broadband tunable Modulator for Terahertz Photonics- MeitY

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**Objective of the Project:** development of a compact broadband tunable modulator for high-speed terahertz communication devices.

- ❖ IIT Guwahati in collaboration with Mahindra University is trying to develop a prototype device for terahertz broadband modulation useful for high speed communication which can address the demand of increasing speed and bandwidth for applications in artificial intelligence, high speed mobile communication etc.
- ❖ We are exploring multi-stacked metamaterial configuration for broadband tunable terahertz transmission as depicted in the figure (a). We have been able to achieve a bandwidth of 0.7 THz so far.
- ❖ Flow chart of the scheme to be adopted for the development of prototype device is given in figure(b).

