THz Project

Report no.5a
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25 December 2006

Measuring shielding efficiency of different materials – corrected version

The schematic of measurement setup used for THz characterization of different materials is shown in Fig.1a. The polyethylene lens manufactured in the Weizman Inst. Workshop were used to improve the efficiency of the setup. General view of this setup is depicted in Fig. 1b.

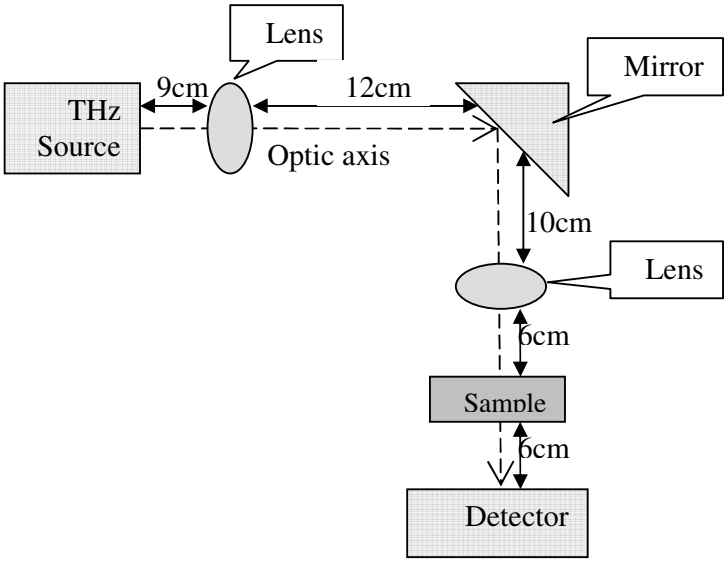

Fig. 1a. The schematic of measurement setup used for THz characterization of shielding efficiency.

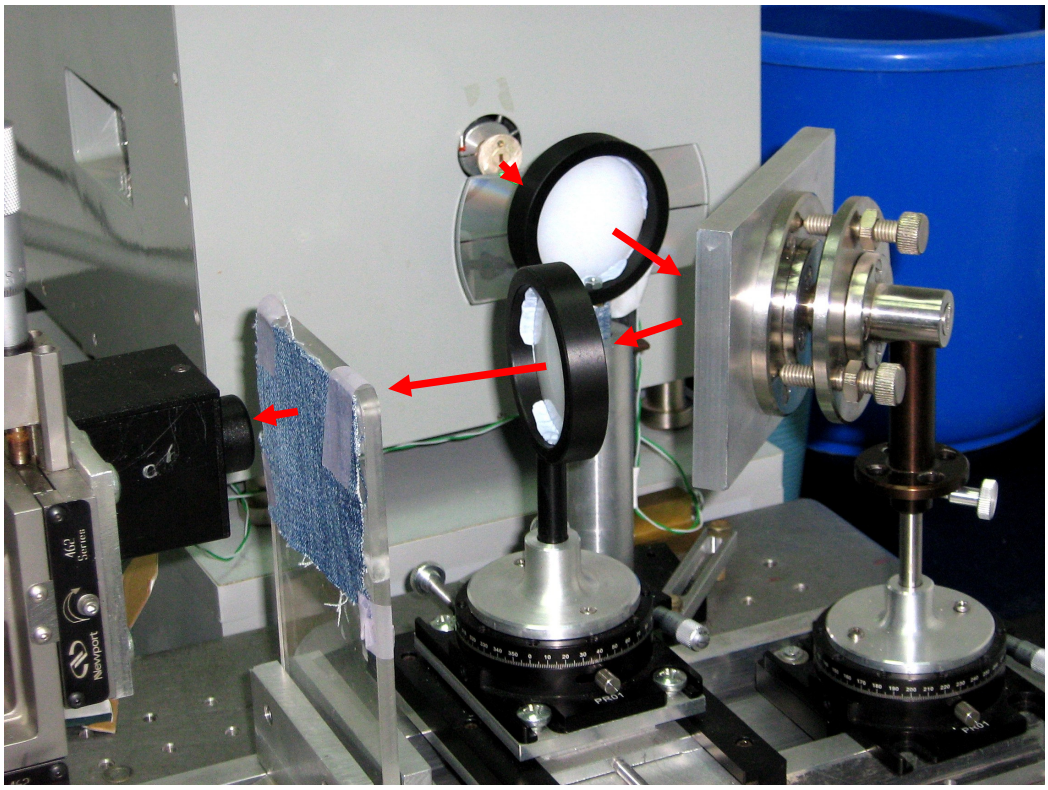

Fig. 1b. The photo of the measurement setup used for THz characterization of shielding efficiency.

The set of different fabric materials has been tested using transmitting mode with normal incidence. Five samples shown in Fig.2-6 was measured at frequency 0.9 THz and at mm-waves using quasi-noise source. The normalized attenuation in dB/cm is shown in Fig.7.

Fig. 2 Material sample #1

Fig. 3 Material sample #2

Fig. 4 Material sample #3

Fig. 5 Material sample #4

Fig. 6 Material sample #5

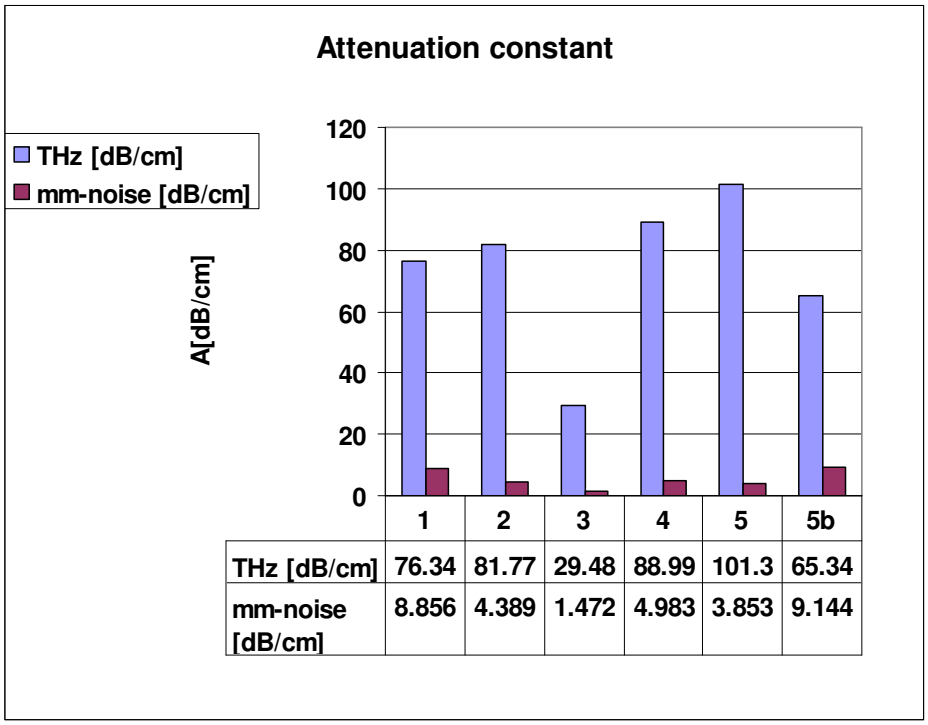

Fig. 7 Normalized attenuation constant for different fabric's materials on THz and mm-wave frequencies