



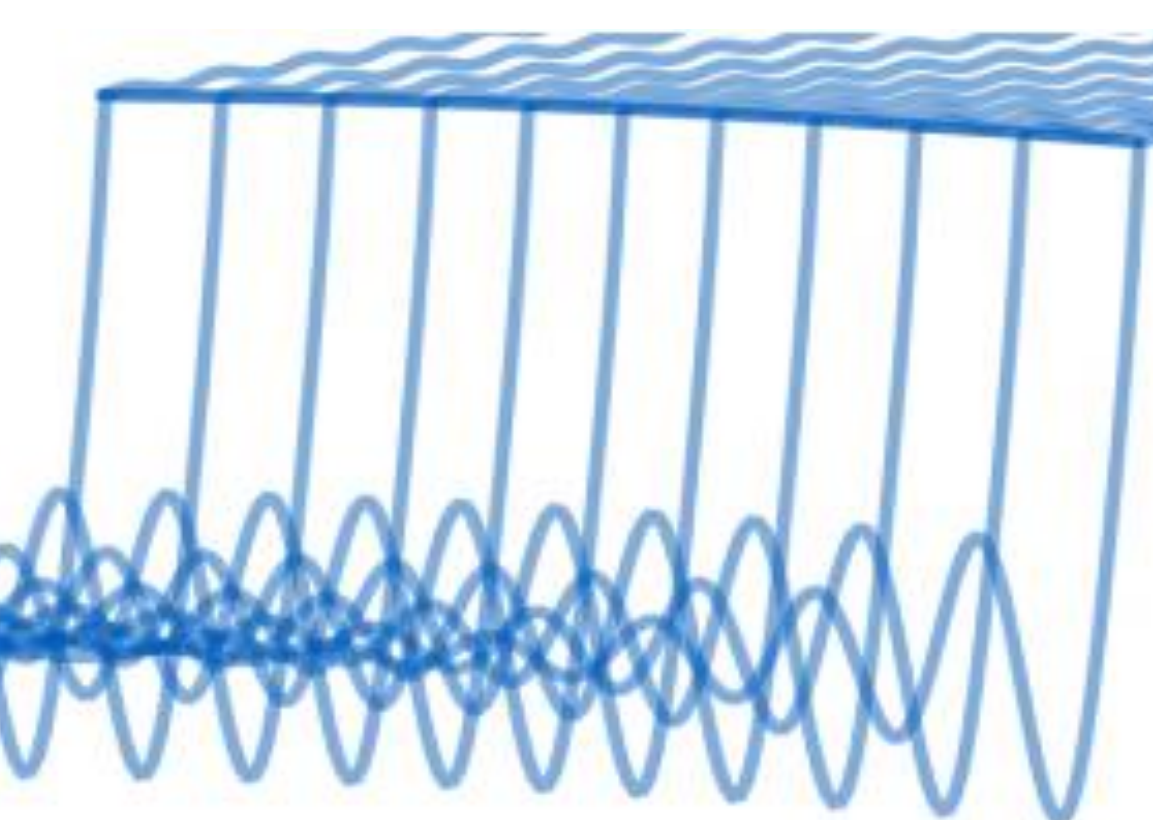
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IRMMW-THz 2020

November 8-13, 2020

A virtual event hosted from
Buffalo, New York, USA

45th International Conference on Infrared, Millimeter, and Terahertz Waves



Studies Of Terahertz Radiation From Optically Excited Indium Tin Oxide / Semi Insulating Gallium Arsenide Interface

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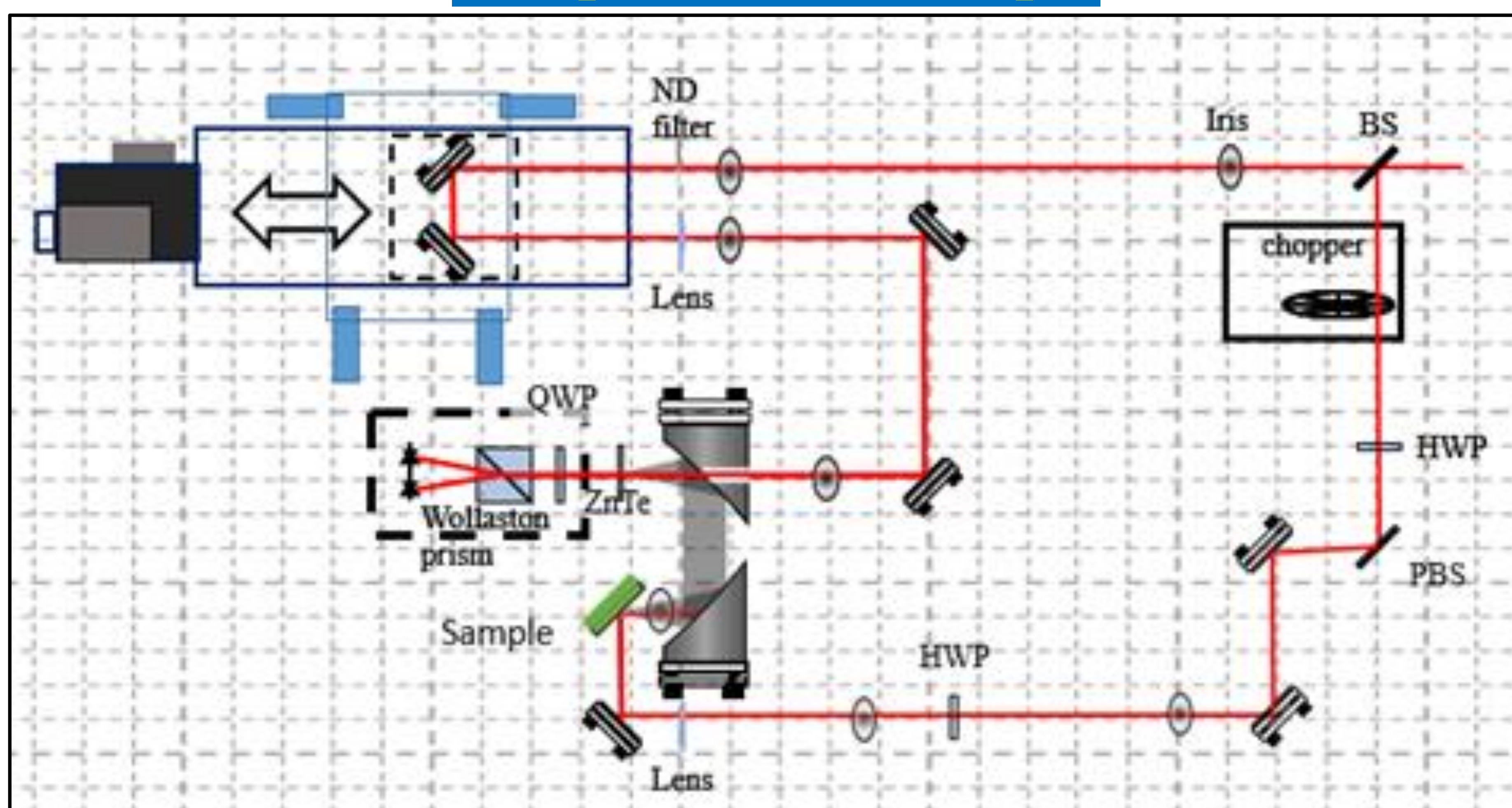
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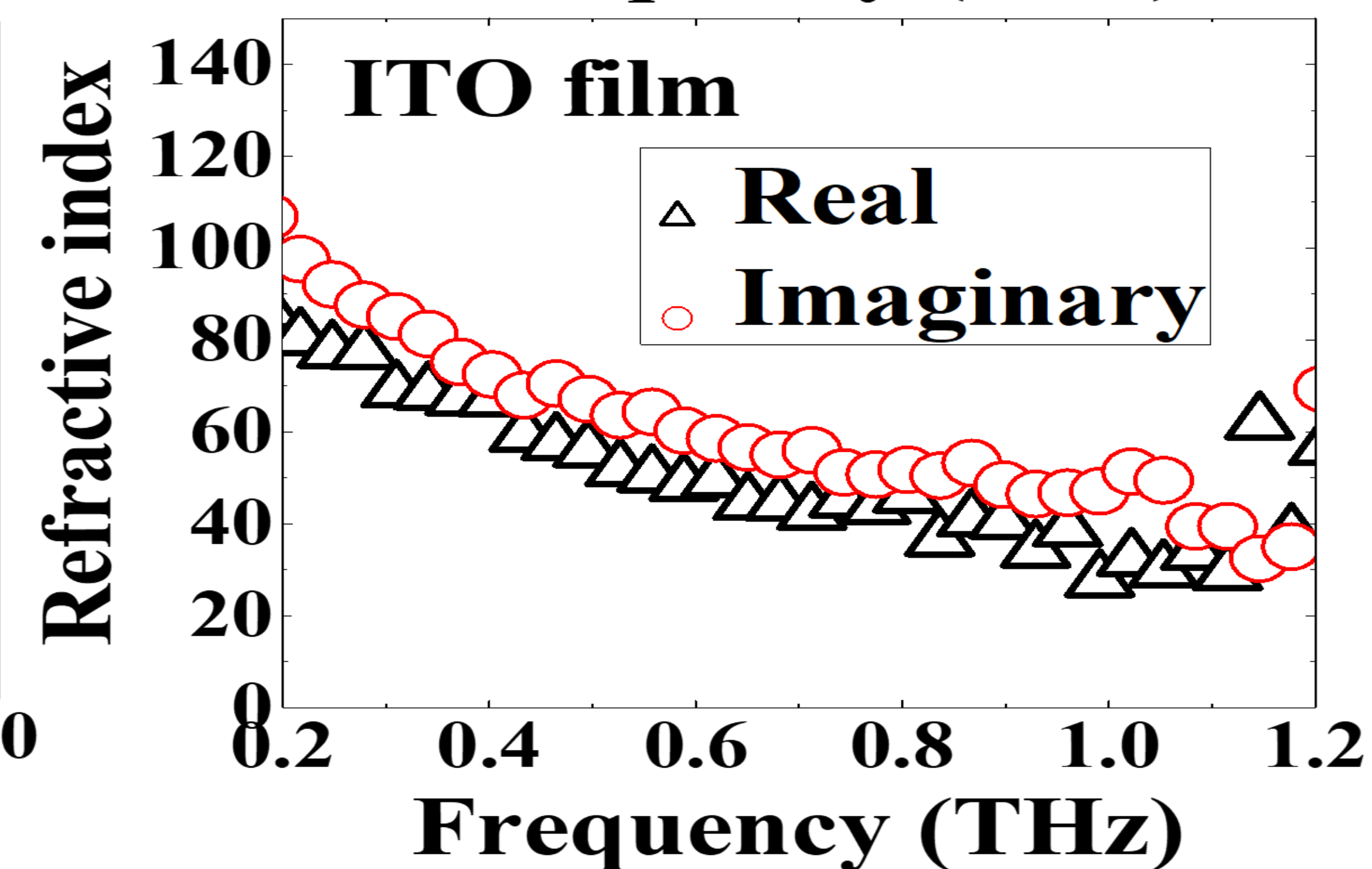
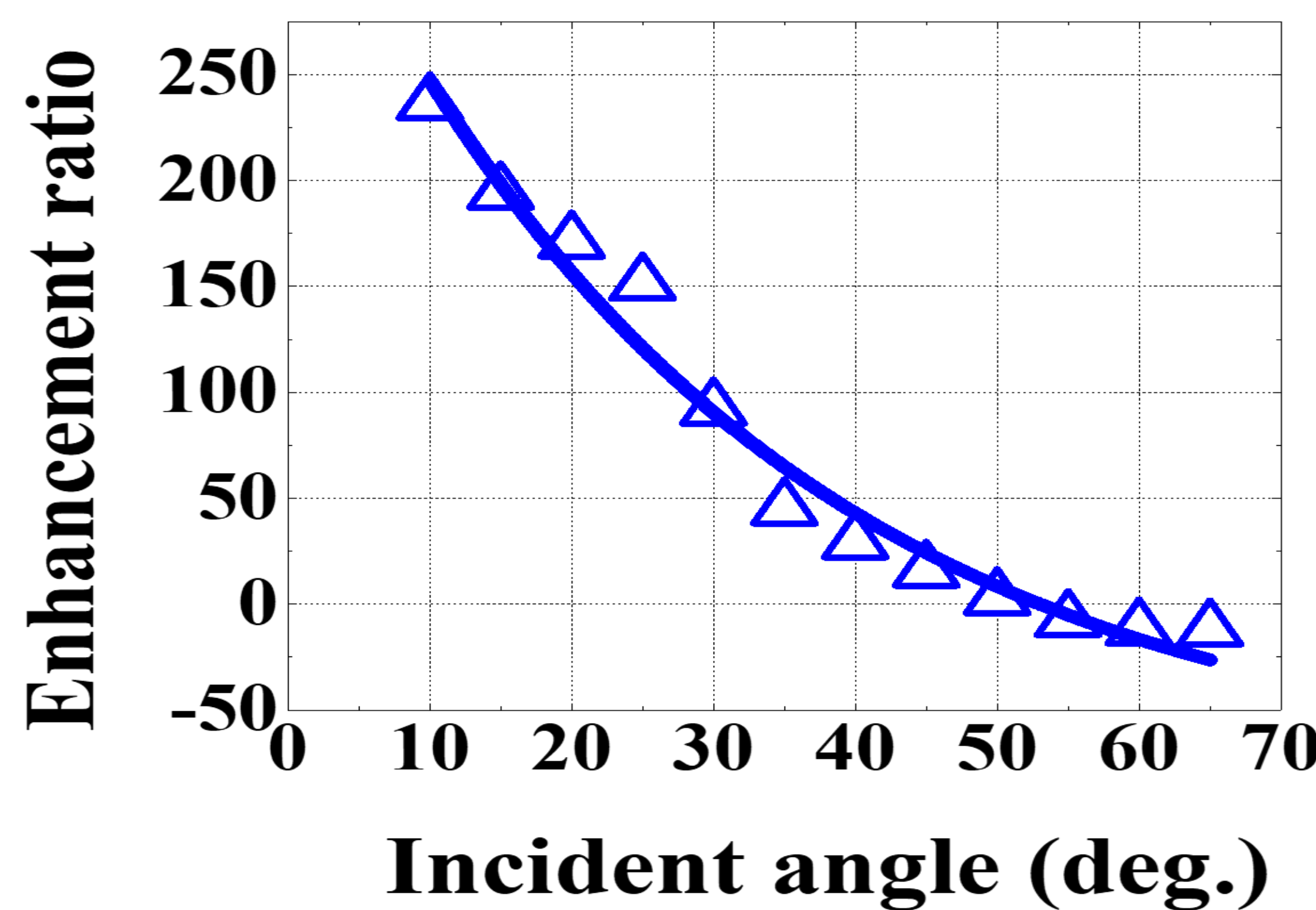
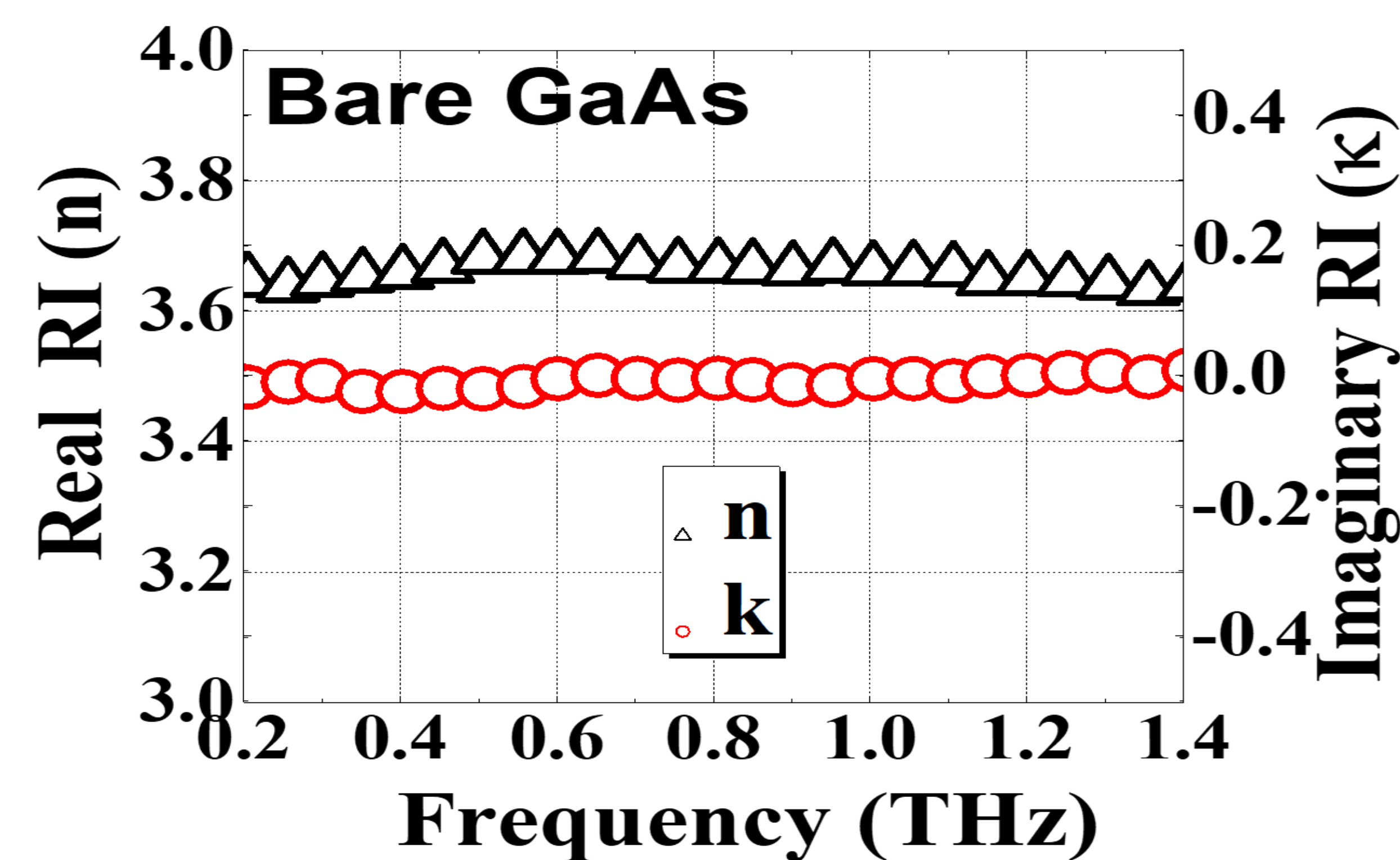
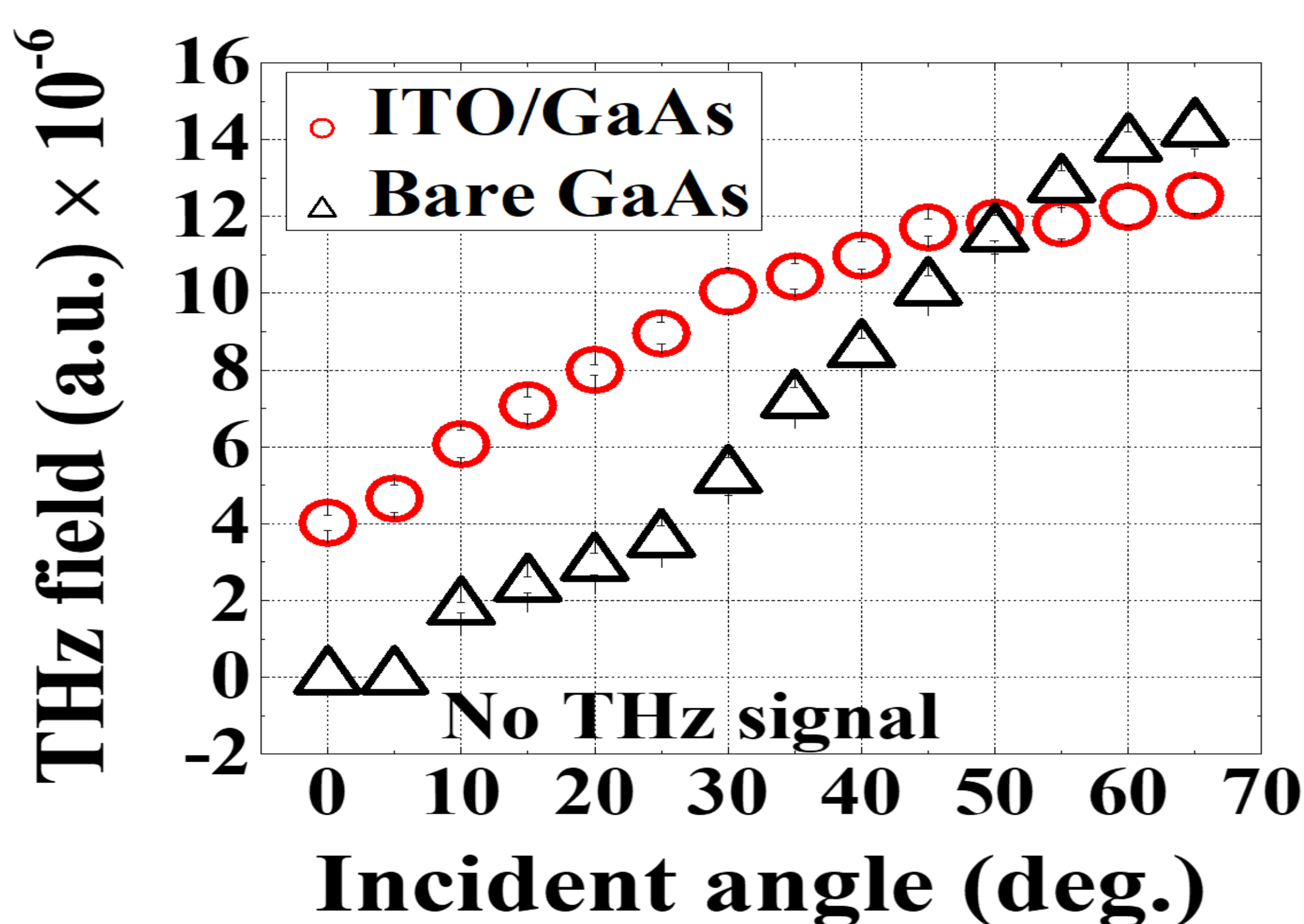
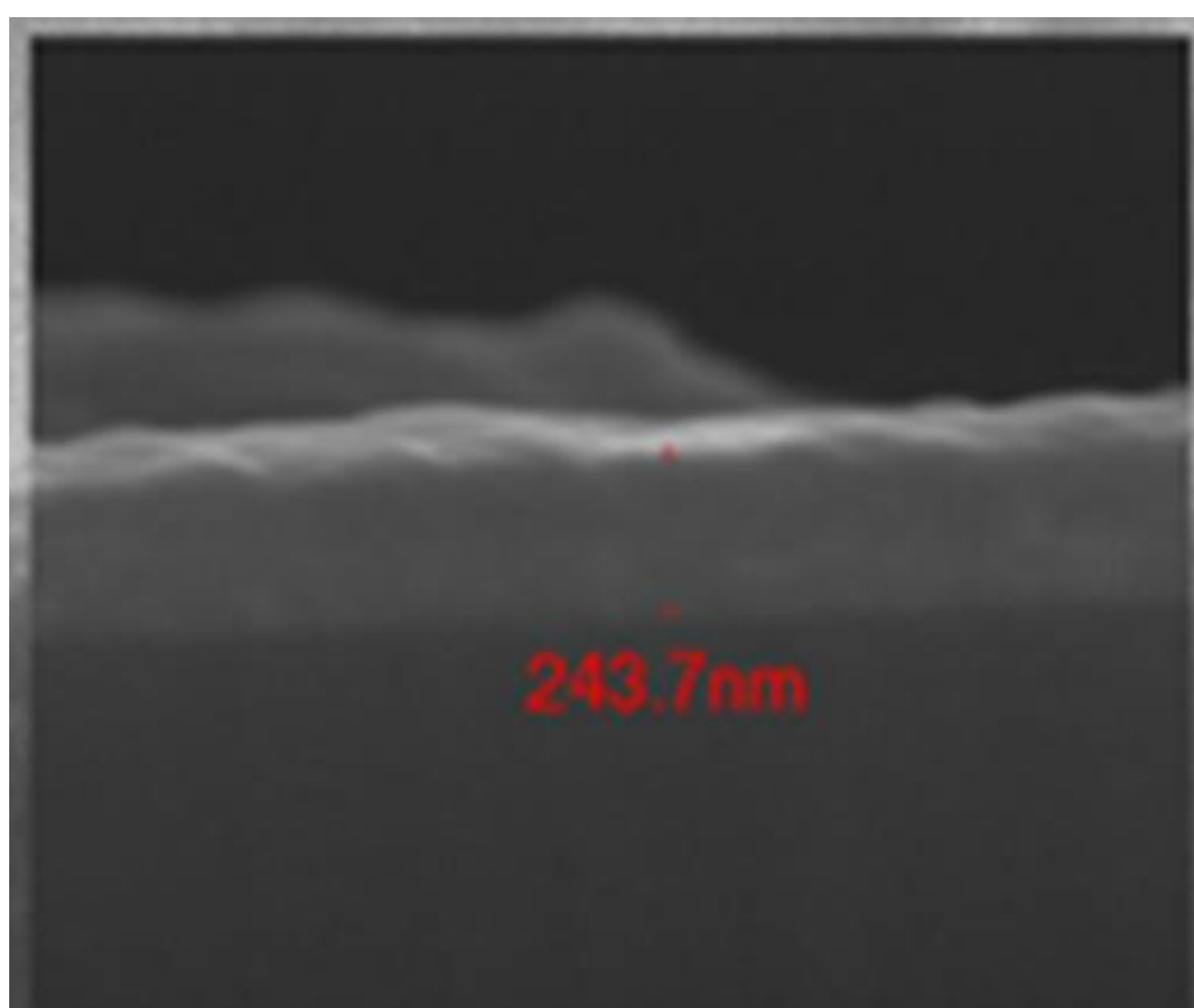
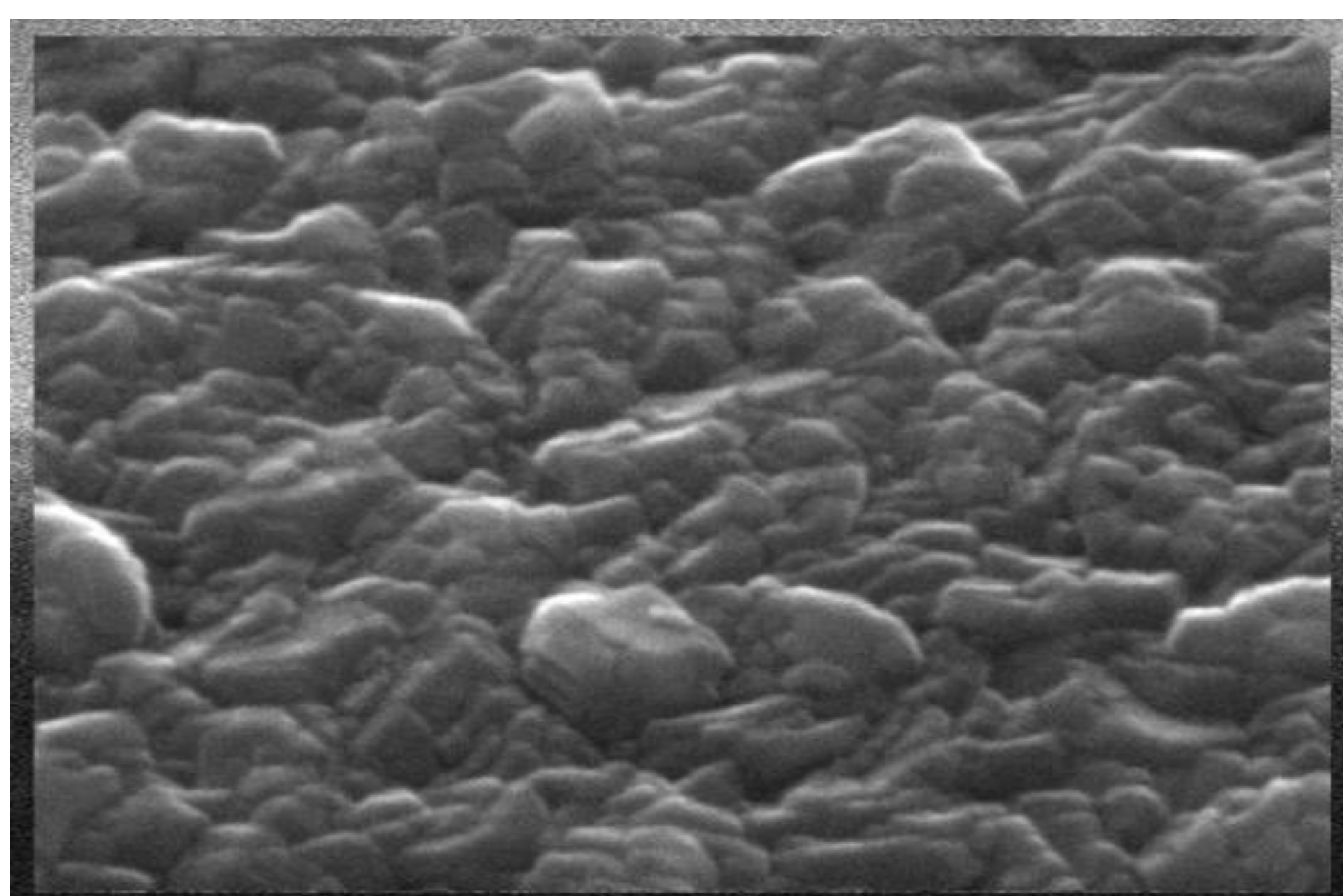
Objective

- Excited the ITO/GaAs samples by using 800 nm wavelength based femtosecond laser source for THz emission
- Compared the power of THz emission from ITO/GaAs interface to bare GaAs substrate,
- Analyzed the effect of THz emission by changing angle of incident excitation and pump power.
- Compared experimental results with optical rectification (OR) theoretical model.
- Dipole radiation model, Fresnel equation, and absorption of ITO were consider for theoretical formulism

Experimental setup



Result and discussions



Conclusions

- We presented our studies on the emission characteristic of ITO/SI-GaAs interface.
- Enhancement is seen in angular dependency experiment with incident angle smaller than 70°, while for power dependency experiment, enhancement is it always found.
- The mechanism further need to investigate by optical rectification theory and photo-Dember effect.

References

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