

## IV. Publications

### A. Journal papers:

1. **H. Y. Yao**, Y. C. Wang, and T. H. Chang, "Investigation of dielectric spectrums, relaxation processes, and intermolecular interactions of primary alcohols, carboxylic acids, and their binary mixtures," *J. Mol. Liq.* **353**, 118755 (2022). **IF : 6.165.**
2. **H. Y. Yao**, C. H. Wei, and T. H. Chang, "Nonlinear and self-consistent single-mode formulation for TM-mode gyrotrons," *Phys. Rev. E* **104**, 065205 (2021). **IF : 2.529.**
3. **H. Y. Yao**, Y. W. Lin, and T. H. Chang, "Dielectric properties of BaTiO<sub>3</sub>-epoxy nanocomposites in the microwave regime," *Polymers* **13**, 1391 (2021). **IF : 4.329.**
4. **H. Y. Yao** and T. H. Her, "Mechanism and sensitivity of Fano resonance tuning in high-contrast gratings" *Opt. Lett.* **46**, 721 (2020). **IF : 3.776.**
5. **H. Y. Yao** and T. H. Chang, "Time-domain analysis of superluminal effect for one-dimensional Fabry-Perot cavity," *Chin. J. Phys.* **67**, 657 (2020). **IF : 3.31.**
6. **H. Y. Yao**, D. R. Hsiao, and T. H. Chang, "Fast, nondestructive, and broadband dielectric characterization for polymer sheets," *Polymers* **12**, 1891 (2020). **IF : 4.329.**
7. S. C. Su, **H. Y. Yao**, and T. H. Chang, "Characterization of ferrites using a fully loaded waveguide system," *J. Magn. Magn. Mater.* **505**, 166712 (2020). **IF : 3.046.**
8. **H. Y. Yao**, C. C. Chen, and T. H. Chang, "Starting behaviors of the TM-mode gyrotrons," *Phys. Plasma* **27**, 022113 (2020). **IF : 2.023.**
9. **H. Y. Yao**, W. C. Chang, L. W. Chang, and T. H. Chang, "Theoretical and experimental investigation of ferrite-loaded waveguide for ferrimagnetism characterization," *Prog. Electromagn. Res. C* **90**, 195-208 (2019). **IF : 1.48.**
10. M. E. Green, D. A. Bas, **H. Y. Yao**, J. J. Gengler, R. J. Headrick, T. C. Back, A. M. Urbas, M. Pasquali, J. Kono, and T. H. Her, "Bright and Ultrafast Photoelectron Emission from Aligned Single-Wall Carbon Nanotubes through Multiphoton Exciton Resonance," *Nano Lett.* **19**, 158-164 (2018). **IF : 11.19.**
11. **H. Y. Yao**, Z. Y. Chen, and T. H. Chang, "A design of broadband and low-loss multilayer antireflection coating in THz region," *Prog. Electromagn. Res. C* **88**, 171 (2018). **IF : 1.48.**
12. T. H. Chang, **H. Y. Yao**, B. Y. Su, W. C. Huang, and B. Y. Wei, "Nonlinear oscillations of TM-mode gyrotrons," *Phys. Plasma* **24**, 122109 (2017). **IF : 2.023.**

13. T. H. Chang, W. C. Huang, **H. Y. Yao**, C. L. Hung, W. C. Chen, and B. Y. Su, "Asymmetric linear efficiency and bunching mechanisms of TM modes for electron cyclotron maser," *Phys. Plasma* **24**, 023302 (2017). **IF : 2.023.**
14. **H. Y. Yao**, N. C. Chen, T. H. Chang, and H. G. Winful, "Tunable negative group delays in a birefringent waveguide with high fractional advancement induced by cross-interference effect," *IEEE Trans. Microw. Theory Techn.* **64**, 3121 (2016). **IF : 3.599.**
15. **H. Y. Yao**, J. Y. Jiang, Y. S. Cheng, Z. Y. Chen, T. H. Her, and T. H. Chang, "Modal analysis and efficient coupling of TE<sub>01</sub> mode in small-core THz Bragg fibers," *Opt. Express* **23**, 27266 (2015). **IF : 3.669.**
16. **H. Y. Yao**, N. C. Chen, T. H. Chang, and H. G. Winful, "Frequency-dependent cavity lifetime and apparent superluminality in Fabry-Perot-like interferometers," *Phys. Rev. A* **86**, 053832 (2012). **IF : 3.140.**
17. **H. Y. Yao** and T. H. Chang, "Experimental and theoretical studies of a broadband superluminality in Fabry-Perot interferometer," *Prog. Electromagn. Res.* **122**, 1 (2012). **IF : 2.475.**
18. **H. Y. Yao** and T. H. Chang, "Effect of high-order modes on tunneling characteristics," *Prog. Electromagn. Res.* **101**, 291 (2010). **IF : 2.475.**
19. **H. Y. Yao**, Y. C. Wang, T. H. Her and T. H. Chang, "Bandwidth tunable optical bandpass filter based on a tri-mode high-contrast grating," to be submitted to *Optica*.
20. **H. Y. Yao**, Y. C. Wang, T. H. Her and T. H. Chang, "Bandwidth tunable optical bandstop filter based on a tri-mode high-contrast grating," to be submitted to *Appl. Phys. Lett.*

## **B. Conference papers (international):**

1. **H. Y. Yao**, C. H. Wei, and T. H. Chang, “Nonlinear and Self-Consistent Formulation for TM-mode Gyrotrons,” O2-PP-003, TPS 2022 (Oral).
2. Y. C. Wang, **H. Y. Yao**, and T. H. Chang, “Broadband permittivity characterization of alcohol-carboxylic acids binary mixtures by coaxial-circular waveguide junction,” PP-PP-015 (Poster).
3. Y. W. Lin, **H. Y. Yao**, and T. H. Chang, “High-Q Fano resonance in high-contrast grating for thin-film dielectric characterization in the sub-THz regime,” PP-PP-016 (Poster).
4. C. H. Wei, **H. Y. Yao**, and T. H. Chang, “Optimization of TM<sub>11</sub>-mode gyrotron backward-wave oscillator by two-step tapered structure,” PP-PP-017 (Poster).
5. **H. Y. Yao**, C. H. Wei, and T. H. Chang, “Nonlinear and Self-Consistent Formulation for TM-mode Gyrotrons,” 8O-B-06, ICOPS 2021 (Oral).
6. T. H. Her, J. M. Solomon, S. H. Chen, **H. Y. Yao**, L. S. Lu, S. Ahmad, W. C. Chiu, C. H. Chang, S. C. Lin, J. Obeid, W. H. Chang, and C. W. Luo, “Optical breakdown of monolayer transition metal dichalcogenides induced by femtosecond laser,” WC3.3, IEEE RAPID 2021 (Invited talk).
7. J. M. Solomon, **H. Y. Yao**, L. S. Lu, W. H. Chang, T. H. Her, and C. W. Luo, “Ultrafast ablation and the role of avalanche ionization in transition metal dichalcogenides,” SW3H.1, CLEO 2021 (Invited talk).
8. **H. Y. Yao** and T. H. Her, “Mechanism and sensitivity of Fano resonance tuning in high-contrast gratings,” JW1A, CLEO 2021 (Poster).
9. T. H. Her, J. M. Solomon, S. H. Chen, **H. Y. Yao**, L. S. Lu, J. Obeid, Y. C. Wu, W. H. Chang, and C. W. Luo, “Femtosecond laser-induced breakdown of monolayer two-dimensional materials,” SW3G.1, CLEO 2020 (Invited talk).
10. **H. Y. Yao**, “Start-oscillation Behaviors of the TM mode gyrotrons”, TA2-S2-006, ICOPS 2020 (Oral).
11. D. R. Hsiao, **H. Y. Yao**, and T. H. Chang, “Development of a non-destructive circular waveguide system for broadband dielectric characterization of sheet materials,” P2-PA-033, TPS 2020 (Poster).
12. C. Chen, **H. Y. Yao**, and T. H. Chang, “Two-section waveguide system for liquid characterization,” P2-PA-009, TPS 2020 (Poster).
13. **H. Y. Yao**, C. C. Chen, and T. H. Chang, “Starting behaviors of the TM-mode gyrotrons,” P2-PA-031, TPS 2020 (Poster).
14. S. C. Su, **H. Y. Yao**, T. H. Chang, “Characterization of ferrites using fully loaded waveguide

- system,” O5-PA, TPS 2020 (Oral).
15. **H. Y. Yao**, C. Chen, T. H. Chang, “Microwave liquid characterization systems for the investigation of alcohol molecular dynamics,” O5-PA, TPS 2020 (Oral).
  16. S. C. Su, **H. Y. Yao** and T. H. Chang, “Characterization of ferrites using fully loaded waveguide system,” 2019 台灣磁性技術協會年會暨第 31 屆磁學與磁性技術研討會 (Oral).
  17. T. H. Chang, H. W. Chao, **H. Y. Yao**, and S. C. Su, “Characterization and Applications of Ferrite Materials,” 2019 台灣磁性技術協會年會暨第 31 屆磁學與磁性技術研討會 (Oral).
  18. C. Chen, S. C. Su, **H. Y. Yao**, and T. H. Chang, “Three-section rectangular waveguide system for liquid characterization,” P2-PA-009, TPS 2019 (Poster).
  19. **H. Y. Yao**, Z. Y. Chen, T. H. Chang, “A Design of broadband THz antireflection coating,” O4-OE-03, TPS 2019 (Oral).
  20. J. M. Solomon, **H. Y. Yao**, Li. S. Lu , W. H. Chang, and T. H. Her, “Femtosecond-laser ablation of monolayer molybdenum disulfide ( $\text{MoS}_2$ ) on sapphire,” SM3H.4, CLEO 2019.
  21. D. A. Bas, M. E. Green, **H. Y. Yao**, J. J. Gengler, R. J. Headrick, T. C. Back, A. M. Urbas, M. Pasquali, J. Kono, and T. H. Her, “Bright and Ultrafast Photoelectron Emission from Aligned Single-Wall Carbon Nanotubes through Multiphoton Exciton Resonance,” STh4H.5, CLEO 2019.
  22. **H. Y. Yao**, J. Y. Jiang, Y. S. Cheng, Z. Y. Chen, T. H. Her, and T. H. Chang, “Efficient coupling of  $\text{TE}_{01}$  Mode in small-core THz Bragg fiber,” THz Workshop 2015 (Oral).
  23. **H. Y. Yao**, Z. Y. Chen and T. H. Chang, “Broadband Multilayer Antireflection Coating in THz Region,” IRMMW-THz 2015 (Poster).
  24. **H. Y. Yao**, J. Y. Jiang, Y. S. Cheng, Z. Y. Chen, T. H. Her, and T. H. Chang, “Design and efficient coupling of  $\text{TE}_{01}$  mode in small-core THz Bragg fibers” IRMMW-THz 2015 (Poster).
  25. **H. Y. Yao**, N. C. Chen, T. H. Chang, and H. G. Winful, “Tunable and broadband negative group delays in a birefringent waveguide,” IRMMW-THz 2014 (Poster).
  26. **H. Y. Yao**, J. Y. Jiang, Y. S. Cheng, Z. Y. Chen, T. H. Her, and T. H. Chang, “Design and efficient coupling of  $\text{TE}_{01}$  mode in small-core THz Bragg fibers,” IRMMW-THz 2014 (Poster).
  27. **H. Y. Yao**, N. C. Chen, T. H. Chang, and H. G. Winful, “Frequency-dependent cavity lifetime and apparent superluminality in Fabry-Pérot-like Interferometers,” APS 2013 (Poster).

28. **H. Y. Yao** and T. H. Chang, “Effect of high-order modes on tunneling characteristics,”  
PIERS 2011 (Poster).