Investigation on Gain Properties of Organic Single Crystals towards Electrically Driven Lasers

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Introduction

Organic Solid Lasers

- Low Money Cost
- Mechanically Flexible
- Biocompatible
- Electrically driven OLS (Still a challenge)
- Color tunable

Experimental Processes

- Amplified Spontaneous Emission
- Transient Absorption

Potential Reasons

- Two Parts of Delocalized π-Conjugation of Electrons
- Singlet-Singlet Annihilation

Gain Property (Crucial Factor)

- Stimulated Emission
- Amplified Spontaneous Emission

ASE Characterization (Previous Work)

- Investigate the reasons of dual gain narrowing peaks

Research Focus

- Non-radiated process
- Singlet-Singlet Annihilation can only explain the saturation behavior of the peak at 544nm.

Conclusions

- The number of gain narrowing peaks are re-absorbed in BP2T and BP2F single crystals.