10th European Conference on Applications of Femtosecond Lasers in Materials Science

February 24 - 27, 2025, Mauterndorf Castle, Mauterndorf, Salzburg, Austria

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Progress in STED-inspired sub-diffractional lithography of epoxides

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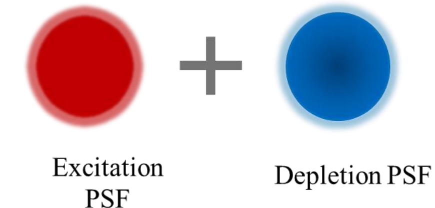
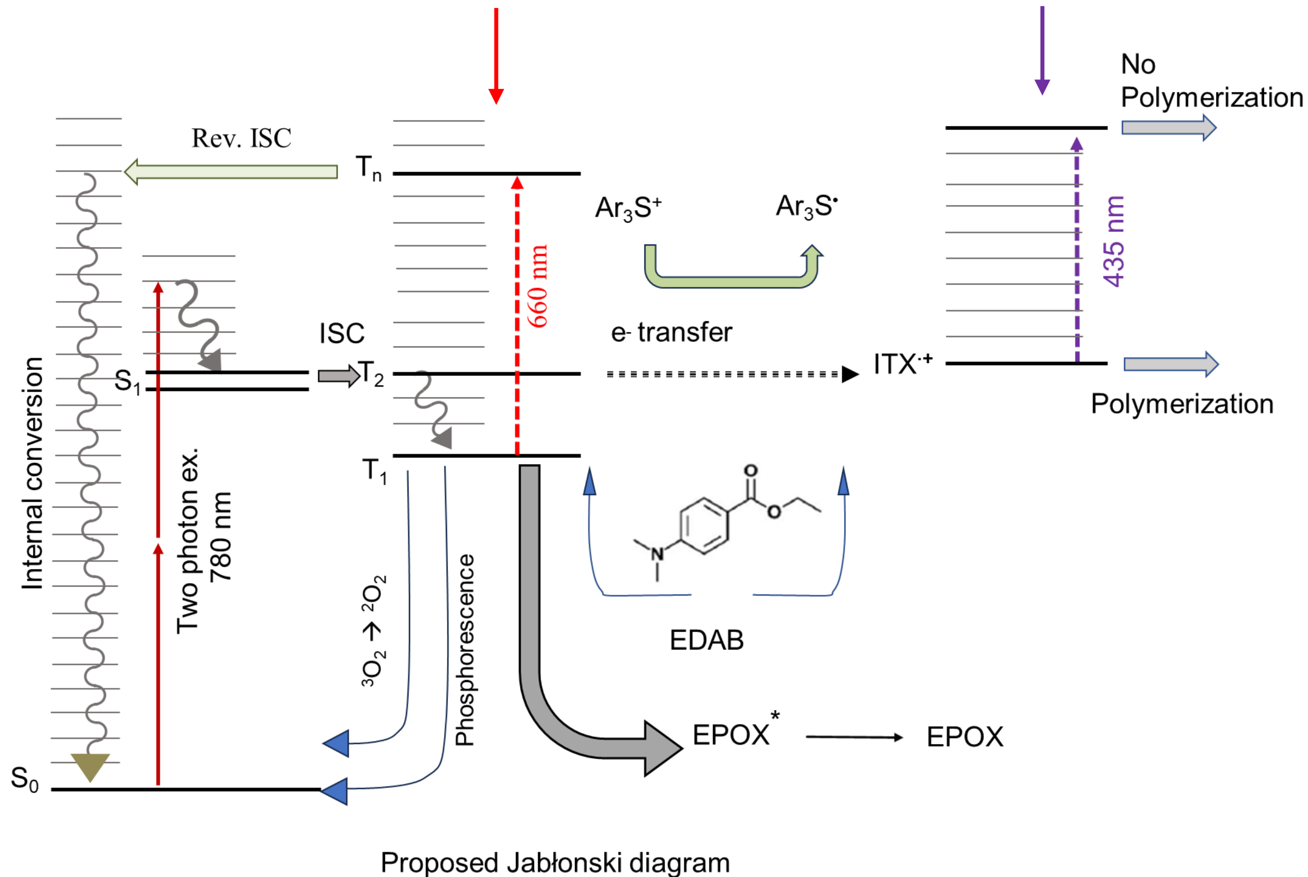
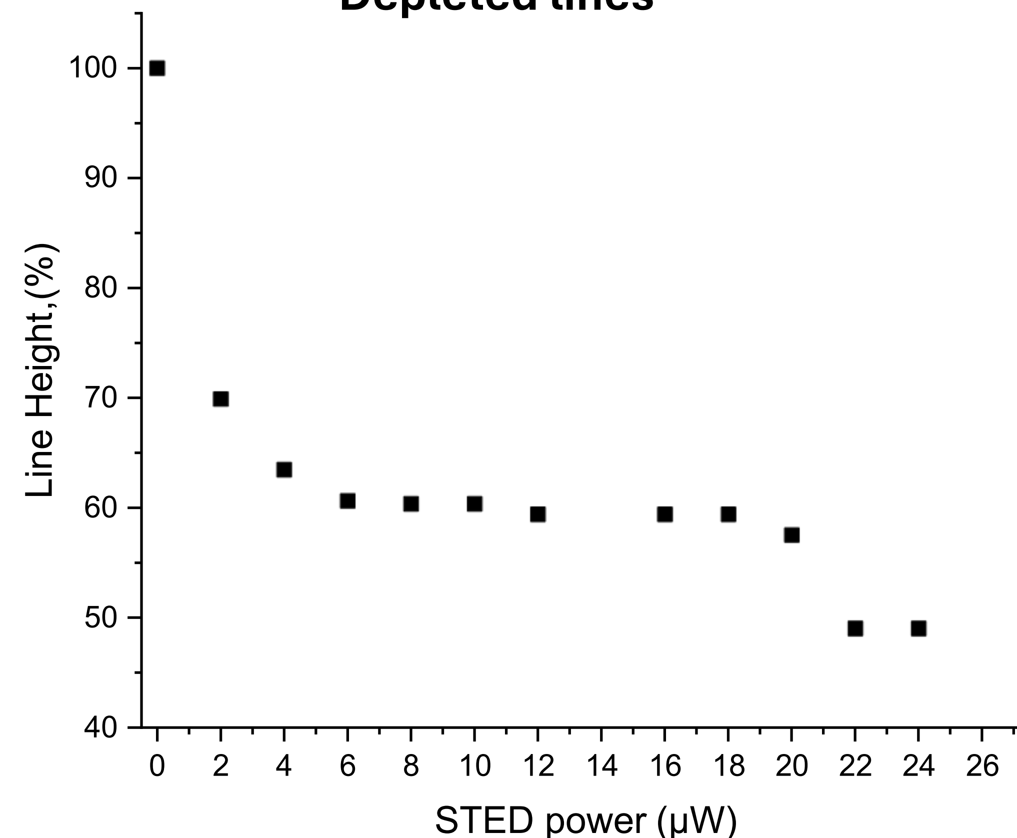
- **Motivation: STED-inspired multiphoton lithography (MPL)** has improved radical polymerization but remained unexplored for **cationic systems like epoxides**.
- **Goal:** Demonstrate **high-resolution lithography** using ITX-based photoresists with a quenching agent and an alternative depletion mechanism, achieving feature sizes comparable to those obtained in acrylate polymerization.

previously (see Poster Islam, Klar)

now: quenching of ITX radical ion







Photochemistry:

- **Monomer:** *3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate (EPOX)*
- **Photo-initiator:** *Triarylsulfonium hexafluoroantimonate salt*
- **Photosensitizer:** *2-Isopropylthioxanthone (ITX)*

- **Two step narrowing of linewidth**
- **Only 10 μW of 435 nm laser light needed (instead of 10 mW as in case of 660 nm)**