

# New Initiation Systems for Step-Growth Photopolymerization

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Light-based Hot Lithography is a technique allowing the use of formulations for additive manufacturing which cannot be used at ambient temperatures. The increased temperature during the printing allows faster writing speed and higher conversion. It enables the application of systems which are too slow for ambient temperature lithography.[1–6] Most systems use radical chain-growth polymerization leading to unregulated networks causing a decrease in mechanical properties. We now report a novel photobase-catalyzed initiation system for polyaddition reactions for Hot Lithography without any overpolymerisation and therefore great resolution. Additionally, the formulation showed excellent storage stability even at elevated temperatures. Therefore, our new initiation system is a promising concept for Hot Lithography giving materials with homogenous network architecture and therefore superior mechanical properties.

## References

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### **Speakers Biography**

Klaus Ableidinger studied technical chemistry at TU Wien with a focus on polymer chemistry during his master studies. He conducted his master thesis “Self-reinforcing elastomeres based on aldoxime urethanes“ under the supervision of Robert Liska and Katharina Ehrmann at the Institute of Applied Synthetic Chemistry (TU Wien). Since 2022, he is working on his PhD thesis about “Photobase-catalyzed initiation system for polyaddition reactions for Hot Lithography” under the supervision of Robert Liska.