

Integrated continuous flow photoreactors: Photooxidation of (L)-methionine with singlet oxygen

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1 | INTRODUCTION

Development of photochemistry in macroscopic **batch** reaction vessels is hampered due to inherent limitations: **superficial light penetration** and **poor heat exchange** result in inhomogeneous irradiation and hence to sidereactions or product degradation due to **overexposure**. The recent implementation of photochemical processes in **microreactors** under continuous-flow conditions appeared to be **much more powerful** than its batch analogue in terms of **irradiation efficiency**, light penetration and excellent heat exchange. Furthermore, the fine **control of residence time** ensures an accurate control of the irradiation time, avoiding side-reactions and degradation.



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took 2h. Cbz-methionine methyl ester was also photooxidized and successfully themolyzed into vinylglycine.

peptides or functionalized amino acid. The reaction was performed in less than 1 min while the same reaction in batch