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Communication

Microflow Photochemistry—Photodecarboxylations in Microformats

Michael Oelgemöller ^{1,*}, Sonia Gallagher ^{2,†} and Kevin McCarthy ^{2,†}

¹ James Cook University, School of Pharmacy and Molecular Sciences, Townsville, Queensland 4811, Australia

² Dublin City University, School of Chemical Sciences, Dublin 9, Ireland; E-Mails: sonia.gallagher9@mail.dcu.ie (S.G.); mccarthy_kev@yahoo.co.uk (K.M.)

[†] These authors contributed equally to this work.

* Author to whom correspondence should be addressed; E-Mail: michael.oelgemoller@jcu.edu.au; Tel.: +61-7-4781-4543; Fax: +61-7-4781-6078.

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Abstract: This article summarizes selected examples of intra- and intermolecular photodecarboxylations involving phthalimides in a commercially available dwell device. Compared to batch conditions in a larger chamber reactor, the investigated transformations in the microreactor furnished higher conversions and yields after significantly shorter reaction times. The product qualities were commonly higher under flow conditions thus avoiding the need for further purifications.

Keywords: photodecarboxylation; photochemistry; microreactor; flow chemistry

1. Introduction

Microflow photochemistry combines the advantageous features of microreactors, flow operation and organic photochemistry [1–3]. The microscopic dimensions within micro-structured devices allow for an efficient penetration of light and subsequently yield high energy and quantum efficiencies [4,5]. In addition, continuous flow operation reduces photodecompositions of light-sensitive products [6] and avoids the accumulation of potentially hazardous materials in larger amounts, the latter especially problematic for heterogeneous gas-liquid reactions [7]. Likewise, irradiation enables the synthesis of

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