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## Continuous production of 1-methyl-10 $\alpha$ -methoxydihydrolysergic acid methyl ester via microreactors

*Student: Mgr. Natalie Jaklová*  
*Supervisor: Doc. Ing. Petr Klusoň, DSc.*  
*Supervising Expert: Ing. Petr Stavařek, Ph.D.*

The main topic of the contribution is the conversion of the batch N-alkylation reaction into a continuous regime. It is the reaction of 10 $\alpha$ -methoxydihydrolysergic acid methyl ester to 1-methyl-10 $\alpha$ -methoxydihydrolysergic acid methyl ester.<sup>1</sup> This reaction represents a one step in industrial synthesis of Nicergoline, a pharmaceutical used for example for senile dementia treatment.<sup>2,3</sup> This methylation reaction is performed in two immiscible liquid phases. Phase transfer catalysis is used to increase the efficiency of the reaction, which allows the reaction to proceed in the entire volume of organic solvent, not only at the phase interface.<sup>4,5</sup> The reaction is fast and has an exothermic character. The advantages of continuous arrangement are better control of the reaction, increased operational safety due to the handling of smaller volumes of reaction components, and simplification of the reaction procedure.<sup>6–8</sup> The present contribution addresses the influence of reaction conditions on the course of the reaction in a microfluidic reactor. The feasibility of reaction in microchip reactor, optimization of reaction condition, the scaling-up and effect of sonication to selectivity and conversion of the reaction will be presented.

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