



**Molecular Biotechnology Programme
Uppsala University School of Engineering**

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Author Ola Ljunggren			
Title (English) Microscale Sample Preparation in Chip-Based Chemical Analysis			
Title (Swedish) <i>Miniatyriserad provpreparering i chipbaserade analyssystem</i>			
Abstract The concept of miniaturised chemical analysis technology is gaining more and more attention. One of the advantages anticipated with this technology is the integration of many functions on the same chip, to create so-called micro total analysis systems (μ TAS) or lab-on-a-chip systems. A particularly advantageous feature is considered the integration of chemical sample preparation on the chip, which could lead to front-end fully integrated analytical systems. In this work, a background survey regarding on-chip sample preparation is conducted, along with an analysis of the chemical requirements of sample preparation. Finally, a number of design proposals are presented, for how to implement those requirements through microstructure technology on silicon, glass or polymer chips.			
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Supervisor Dr. Ulf Lindberg Department of Materials Science, Uppsala University			
Scientific reviewer Prof. Karin Caldwell Centre for Surface Biotechnology, Uppsala University			
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Biology Education Centre Box 592 S-75124 Uppsala	Biomedical Center Tel +46 (0)18 4710000	Husargatan 3 Uppsala Fax +46 (0)18 555217	