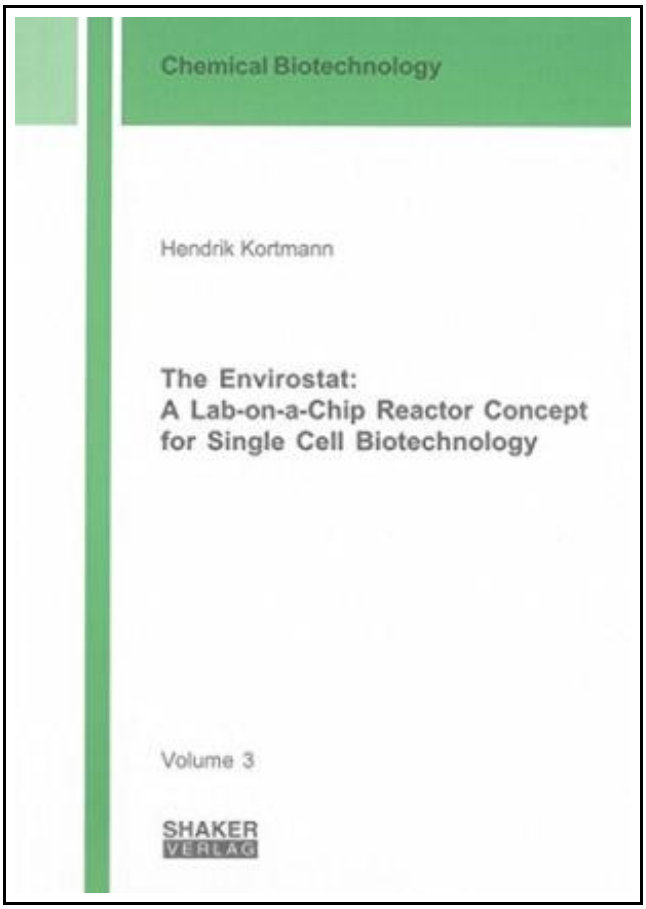
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Undoubtedly, this is the best work by any author. It is really simplified but shocks within the 50 % in the publication. Its been written in an extremely straightforward way and is particularly just following i finished reading this publication by which basically altered me, modify the way in my opinion.
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THE ENVIROSTAT: A LAB-ON-A-CHIP REACTOR CONCEPT FOR SINGLE CELL BIOTECHNOLOGY

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Shaker Verlag Apr 2010, 2010. Buch. Book Condition: Neu. 21x14.8x cm. Neuware - Cells, equal or not equal That is the question pursued in this thesis. A question not answerable by population data reporting averaged read outs of millions of cells and answerable using flow cytometry only for a specific point in time. Here spatiotemporal single cell analysis under fully controlled environmental conditions was the aim, approached by the design, construction and use of a lab-on-a-chip reactor concept, the Envirostat. The Envirostat was based on a commercial available microfluidic chip, which provided contactless cell handling and trapping by negative dielectrophoresis. A new interface was constructed for fluidic and electric coupling of the fragile lab-on-a-chip. The interface decreased the setup-time more than six-fold to less than five minutes and more importantly made the setup highly reliable and reproducible. Chip damage due to breakage and overpressure is now almost impossible. The absence of manually metering the connection force and integration of all interconnections in one block allows automation of the chip-assembly. Single cell cultivation under environmental controlled and constant conditions, was accomplished by the Envirostat concept. First, the cultivation temperature during cell trapping was controlled by combination of the experimentally characterized negative dielectrophoresis trapping immanent Joule heating and by a newly integrated temperature-device. Second, the Envirostat concept of constant environmental conditions during cultivation of a single yeast cell was supported by simulating the in-chip cultivation conditions by computation fluid dynamics. Third, cultivations starting from single yeast cells were performed in the Envirostat, indicating its usability as bioreactor. Spatiotemporal single cell productivity analysis was another task accomplished. The combination of the Envirostat with confocal microscopy enabled real time protein secretion rate monitoring of trapped fission yeast cells. With this setup, single secretion events of eGFP were detected. The results indicated that few (four)...

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