

生物量浓度实时在线检测方法的研究

Studies of On-line and *In-situ* Measuring Method for Biomass Concentration

投稿时间: 1999-7-1 最后修改时间: 2000-4-10

稿件编号: 20000415

中文关键词: [发酵液](#) [生物量浓度](#) [实时在线检测](#) [电容率分布](#) [高温灭菌](#)

英文关键词: [cell suspension](#) [biomass concentration](#) [on-line and *in-situ* measuring](#) [permittivity dispersion](#) [sterilizing in place](#)

基金项目: 中国-丹麦协作研究项目和山东省教委资助项目 (J94F11) .

作者	单位
王贻俊	山东轻工业学院自动化系, 济南 250100
樊育	山东轻工业学院自动化系, 济南 250100
L. OLSSON	Department of Biotechnology, Technical University of Denmark, DK-2800 Lyngby, Denmark
J. NIELSEN	Department of Biotechnology, Technical University of Denmark, DK-2800 Lyngby, Denmark

摘要点击次数: 92

全文下载次数: 3

中文摘要:

微生物的存在会改变发酵液的电特性, 发酵液在无线电频率范围内的电容率增量是测量频率和生物量浓度的函数. 基于对发酵液电容率分布的研究, 提出了测量生物量浓度的新方法. 用此方法不用取样就能对发酵液中的生物量进行实时在线测量, 而且测得的是活的生物量浓度. 制作的电极直接插入发酵器中并满足高温蒸气灭菌条件. 此方法在生化制药、食品发酵、啤酒酿造、污水检测等工业领域里有很好的推广应用前景.

英文摘要:

A method and a device were developed to monitor biomass concentrations on-line and *in-situ* in a fermentation process. The presence of microbial cells would affect the dielectrical properties of microbial suspensions. At radio-frequencies the dielectric permittivity of cell suspensions are monotonic function of the measuring frequency and cell density. Based on this understanding a new method for measuring biomass concentration is proposed. Using this method the biomass concentrations are measured on-line and *in-situ* without taking samples from the bioreactor, and only viable cells are detected. The electrode could be directly inserted into the fermentor and could be sterilized in place. The method has a wide use in the industrial field of pharmacy, brewery, sewage disposal.

[查看全文](#)

[关闭](#)

[下载PDF阅读器](#)

您是第380976位访问者.

主办单位: 中国科学院生物物理研究所和中国生物物理学会 单位地址: 北京市朝阳区大屯路15号
服务热线: 010-64888459 传真: 010-64889892 邮编: 100101 Email: prog@sun5.ibp.ac.cn

本系统由勤云公司设计, 联系电话: 010-62862645, 网址: <http://www.e-tiller.com>

京ICP备05002794号