



Einladung zum Vortrag von

Dr. Klemens Wassermann

Center for Health & Bioresources, AIT Austrian Institute of
Technology GmbH

**“Electric Fields in Biotechnology –
Applications & Novel Considerations”**

Electric fields are utilized in a wide range of biotechnological applications. In the lab, electroporation is used for gene transfer and cell fusion. Pulsed electric field (PEF) treatment is also used for cell disruption and sterilization in food technology or for tissue ablation and tumor treatment in medicine. For molecular diagnosis and lab on a chip applications, electric fields would offer the possibility for fully integrated and automated sample preparation including cell-specific lysis. However, although first patents for biotechnological applications of electric fields were already filed in the 1960's, the electrode design has not changed significantly ever since. The use of such designs results in uncontrollable effects at the electrode/sample interface, significantly reducing its applicability. This lecture gives a brief overview of the theory of how electric fields act on cells, the applications in biotechnology as well as its current limitations. Also, our work considering an attractive and easy integrable alternative to the “classical” design will be presented. Its feasibility is exemplified by controlled cell specific lysis in the light of molecular diagnosis.

Freitag, 23. März 2018, 15:15 Uhr
Hörsaal 2 der Fakultät für Chemie
Währinger Straße 42, 1090 Wien

Freddy Kleitz
Institut für Anorganische Chemie – Funktionelle Materialien

Veronika Somoza
Vizedekanin

Bernhard Keppler
Dekan

Lothar Brecker
Vizedekan