



REPUBLIC OF SLOVENIA
MINISTRY OF EDUCATION,
SCIENCE AND SPORT

University
of Ljubljana
Faculty of Chemistry
and Chemical Technology



Investing in your future

OPERATION PART FINANCED BY THE EUROPEAN UNION
European Social Fund

**VABILO NA PREDAVANJE
V OKVIRU DOKTORSKEGA ŠTUDIJA
KEMIJSKE ZNANOSTI**

Prof. Alois Jungbauer

*Department of Biotechnology, University of Natural Resources and
Life Science, Vienna, Austria*

z naslovom:

**Industrial precipitation, crystallization and
flocculation of recombinant proteins**

v sredo, 4. februarja 2015 ob 14:00 uri
v predavalnici 1 (K1.119) v 1. nadstropju Fakultete
za kemijo in kemijsko tehnologijo, Večna pot 113

Vljudno vabljeni!



Abstract

Increased titer in biopharmaceutical production requires new strategies for economical processing. Precipitation, crystallization and flocculation are unit operation which overcomes productivity limits of chromatography and membrane technology. General engineering principles how to set up a precipitation, crystallization, or flocculation process for purification of recombinant proteins will be shown. The biophysical principles of precipitation by salt, organic solvent and non-ionic polymers will be explained and commonality with crystallization and flocculation discussed. Thermodynamic (phase diagrams) and engineering models, and kinetics of precipitation, crystallization, and flocculation (orthokinetic and perikinetic phase, induction time) will be shown. Scale up rules will be explained; in particular the concept of fractal dimensions and the Camp number. Examples will be shown for products produced in mammalian cell culture and E.coli. A strategy how to implement such process will be discussed.