

## PERSONAL INFORMATION

## Lukas Kratky

 225, 1.maje, 53401 Holice (Czech Republic)

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 Lukas.Kratky@fs.cvut.cz

## WORK EXPERIENCE

08/2016–Present

## Associate Professor

Czech Technical University in Prague, Faculty of Mechanical Engineering, Department of Process Engineering, Prague (Czech Republic)

- technical design of process machines and apparatuses
- waste treatment technologies
- CCU technologies

09/2013–07/2016

## Assistant Professor

Czech Technical University in Prague, Faculty of Mechanical Engineering, Department of Process Engineering, Prague (Czech Republic)

- technical design of process machines and apparatuses
- biotechnology
- wastewater treatment

09/2011–08/2013

## Mechanical Engineer in Research

Czech Technical University in Prague, Faculty of Mechanical Engineering, Department of Process Engineering, Prague (Czech Republic)

- technologies and equipment for biofuel's production
- pretreatment of wastes

07/2009–12/2010

## Sales Support Assistant

Alfa Laval, Prague (Czech Republic)

- technical support for heating substations (design calculations, 3D design)

07/2005–08/2008

## Junior Designer

Monts, Hradec Kralove (Czech Republic)

- technical design of pressure equipment for waste treatment technologies

## EDUCATION AND TRAINING

02/2014–08/2016

## Assoc. Prof.

Czech Technical University in Prague, Faculty of Mechanical Engineering, Prague (Czech Republic)

- topic of the thesis: Technologies and equipment for intensification of thermo - and biochemical waste conversion to valuable chemicals and biofuels
- topic of the lecture: Technologies and equipment for hydrothermal pretreatment of biowastes

02/2010–01/2014

## PhD

Czech Technical University in Prague, Faculty of Mechanical Engineering, Prague (Czech Republic)

Republic)

- topic of the thesis: Technologies and equipment for waste pretreatment in biofuel's production

09/2004–01/2010

Ing.

Czech Technical University in Prague, Faculty of Mechanical Engineering

- specialization in Process Engineering

## PERSONAL SKILLS

Mother tongue(s)

Czech

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
French	A2	A2	A2	A2	A1
German	A1	A1	A1	A1	A1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages

Communication skills

- presentations of research activities in journals
- lectures or poster presentations at scientific conferences
- lectures, training courses and seminars for czech and foreign students

Organisational / managerial skills

- leadership
- good organisational skills
- good team leading skills for bachelor, master and doctoral theses
- leader of several internal projects
- solver of several projects and grants

Job-related skills

- technical design and process optimization of technologies in chemical and waste treatment industries
- technical design and process optimization of machinery for chemical and waste treatment industries
- momentum, heat and mass transfer in process equipment

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Independent user	Independent user	Independent user

Digital skills - Self-assessment grid

## PROFESSIONAL SKILLS

### Research and Professional Interests

- experimental determination of the physicochemical properties of raw materials
- experimental analysis of heat, mass and movement transfer in equipment
- pretreatment methods of lignocellulosic wastes
- flue gas cleaning by membrane-x proceses
- equipment for Carbon Capture and Utilization technologies
- design and construction of equipment in process industries
- design and optimization of technologies in biorefinery concept, TEA analysis

### Courses and Lectures

- Basic Equipment Design
- Processing Equipment Design
- Biofuels and Bioproducts from Wastes
- design of equipment or technologies regarding Project I., Project III., Diploma Project

### Recent Publications and Research Activities

Authored or co-authored of more than 140 professional printouts – articles in journals with impact factor (9), articles in review journals (13), professional book (1), chapter in book (1), contributions in proceedings from international (more than 60) and national conferences (more than 20), demonstrators (8), design of equipment, industrial applications and industrial realizations (more than 10), research and technical reports.

H-index: 4 - Web of Science, 4 - Scopus, self-citations excluded (28.10.2020).

- KRÁTKÝ, L. a P. ZAMAZAL. Economic feasibility and sensitivity analysis of fish waste processing biorefinery. Journal of Cleaner Production. 2020, 243 ISSN 0959-6526.
- KUTSAY, A., L. KRÁTKÝ a T. JIROUT. Diversity of Biogas Plant Realizations. Chemical Engineering and Technology. 2019, 42(2), 370-380. ISSN 1521-4125.
- KRÁTKÝ, L., S. AZIZOV a T. JIROUT. Lignocellulosic waste treatment in biogas biorefinery with reduced CO<sub>2</sub> production: a techno-economic study. Chemical Engineering Transactions. 2018, 70 1975-1980. ISSN 2283-9216.
- KUTSAY, A., L. KRÁTKÝ a T. JIROUT. Energy-economic analysis of thermal-expansionary pretreatment for its implementation at biogas plant. Chemical Engineering and Technology. 2016, 39(12), 2284-2292. ISSN 0930-7516.
- KRÁTKÝ, L. a T. JIROUT. Moderní trendy předúprav biomasy pro intenzifikaci výroby biopaliv druhé generace (In Czech). Prague: Czech Technique, CTU in Prague, 2015. ISBN 978-80-01-05720-9

### Recent Projects

- BioCCSU - Research centre for low-carbon energy technologies, OP VVV 19 Excellent research, 2018-2022.
- FV10790 – Biofilter with dielectric heating. MPO CZ, 2016-2019.
- TA02011251 - Homogenization and suspension production with a four-blade impeller of a new construction. TACR 2012-2014.
- BATA/NIF/2014 – Hydrothermal pretreatment of wastes for biofuel's production. 2014
- MSM6840770035 - The development of environment-friendly decentralized power engineering. MSM CZ 2007-2013.

### Academic Activities, Memberships in Professional Societies

- Czech Society of Chemical Engineering ČSCH
- European Federation of Chemical Engineering