

Podklady pro habilitační a jmenovací řízení (přehled pedagogické praxe)


Uchazeč: M.Sc. Rafael Omar Torres Mendieta, Ph.D.

Podpis:

Hodnocené období: 2018-2023

1. Vedení přednášek a cvičení v řádném studiu

1) One lecture at the Faculty of Mechatronics Informatics and Interdisciplinary Studies 2017-2018
LS. Functionalization of nanomaterials (2h/week/semester).

welcome													My teaching	Browsing	IS/STAG	Quality of teaching	Candidate	Graduate																				
Schedule and subjects	Information about the user and his roles in IS/STAG																																					
Listing dates	 Dr. Rafael Torres Role / user Teacher: NTI: RAFAEL_TORRES																																					
Entering grades	Teacher's Subjects (S004)																																					
Bulk email	Variant year 2017/2018 Semester LS																																					
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2) One lecture at the Faculty of Mechatronics Informatics and Interdisciplinary Studies 2018-2019
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3) One lecture at the Faculty of Mechatronics Informatics and Interdisciplinary Studies 2019-2020
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4) One lecture at the Faculty of Science, Humanities and Education 2020-2021 LS. Functionalization of nanomaterials (2h/week/semester).

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5) One lecture at the Faculty of Science, Humanities and Education 2021-2022 LS. Functionalization of nanomaterials (2h/week/semester).

welcome

My teaching

Browsing

IS/STAG

Quality of teaching

Candidate

Graduate

Schedule and subjects

Listing dates

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Trainer overview

Course syllabus

Schedule Requirements

Information about the user and his roles in IS/STAG

 Dr. Rafael Torres

Role / user Teacher: NTI: RAFAEL_TORRES

Teacher's Subjects (S004)

Variant year

2021/2022

Semester

LS

Abbreviation	Name - click to get exp. catalog	Year var.	Teaching	Guarantor	Front runner	Exercising	He leads the seminar	Examination	ZS/LS students	Export stamps	Register on exp.	Occurrences of teaching
KCH/FCN	Functionalization of nanomaterials	2021/22	LS					—	0 / 10			

6) One lecture at the Faculty of Science, Humanities and Education 2022-2023 LS. Functionalization of nanomaterials (2h/week/semester).

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Schedule Requirements																			

2. Aktivní doktorand po SDZ - školitel nebo školitel specialist

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| 1) Advisor of the Ph.D. thesis of [REDACTED]. FM, TUL: Surface engineered nanofiber scaffolds for enhanced biofilm formation in microbial fuel cells. |
| 2) Advisor of the Ph.D. thesis of [REDACTED]. FM, TUL: Composition control of laser-generated bimetallic NPs usable as catalysts. |
| 3) Advisor of the Ph.D. thesis of [REDACTED]. FM, TUL: Morphological manipulation of laser-synthesized nanoparticles: the ultimate frontier in laser synthesis of nanocolloids. |

3. Vedoucí úspěšně obhájené diplomové práce

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| 1) Supervisor of Master thesis [REDACTED] lka, FM, TUL: Laser-generated synthesis of Pd-Ni nanoalloys usable as catalysts, 2021. |
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Awards:

- TUL rector's award for outstanding study results 2021.
- Award for outstanding results in the field of nanomaterials by the Ministry of Education, Youth and Sports of the Czech Republic 2021.
- Honorable mention within the CRYTUR 2021 Awards for the best diploma thesis in material sciences in the Czech Republic and Slovakia.

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|---|
| 2) Supervisor of Master thesis [REDACTED], FM, TUL: Control of elemental distribution of laser synthesized Pd / FeO _x nanoparticles, 2022. |
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Awards:

- Dean's award of the Faculty of Mechatronics, Informatics and Interdisciplinary Studies from the TUL – Master studies, 2022.

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|---|
| 3) Supervisor of Master thesis [REDACTED], FM, TUL: Design and automation of experimental laser ablation system operation for affordable and competitive production of nanoparticles, 2022. |
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4. Vedení studentského projektu / sem

1) Supervisor of Bachelor thesis [REDACTED], FM, TUL: Generation of Fe nanoclusters by laser synthesis, 2019.

Awards:

- TUL rector's award for outstanding study results 2019.
- Award for outstanding results in the field of nanomaterials by the Ministry of Education, Youth and Sports of the Czech Republic, 2019.

2) Advisor of Bachelor thesis [REDACTED] FP, TUL: Control of quantitative elemental composition of laser-synthesized gold-nickel nanocolloids, 2022.

Awards:

- Dean's award of the Faculty of Mechatronics, Informatics and Interdisciplinary Studies from the TUL - Bachelor studies, 2022.

5. Výukový film, video, výukový software

1) A scientific outreach video has been prepared for the general public. The name of the video is "Cleaning day", and the idea is to explain in a familiar way to nonspecialized audiences the concept of micelle formation and how it impacts daily activities like when doing laundry. The video follows the formula of outreach video activities promoted and sponsored by the European Commission under the program Marie Skłodowska-Curie Actions.

https://www.youtube.com/watch?v=HDw4gk5pYl8&ab_channel=EuropeanCommission

The original video can be downloaded from:

https://drive.google.com/file/d/1USetQb0DfA9qPcDX8_V4JUfWmaHL7S61/view?usp=sharing

2) A scientific outreach video has been prepared for audiences interested in nanomaterials synthesis. The name of the video is "Laser synthesis - Ultrafast preparation of titanium nanoparticles", and the idea is to show how straightforward is to synthesize Ti NPs with an average size of 64 nm by employing a femtosecond pulsed laser source. The video intends to provide graphical support for academic and non-academic audiences on how the process known as laser ablation in liquids works.

The original video can be downloaded from:

https://drive.google.com/file/d/1DgWMWh1dSFTwe5V-zt9u5VN_dOUrAzDt/view?usp=sharing

3) A set of different videos have been recorded for the e-learning portal of the Technical University of Liberec. The videos collect all the lectures provided to the students of the course Functionalization of nanomaterials (2020/2021). The set of videos was recorded and uploaded to the e-learning platform in an effort to avoid the students experiencing the pandemic's severe consequences had limited access to their education.

Initially, the set of videos was intended to support the students who have the lecture:

<https://elearning.tul.cz/enrol/index.php?id=7902>

However, now these videos are serving as complementary teaching material for students of the course Functionalization of Nanomaterials offered by the chemistry department from the Faculty of Science, Humanities and Education at the Technical University of Liberec.

The set of original 39 videos can be downloaded from:

<https://drive.google.com/drive/folders/1aPsZ8mgm47ILOeUgxWjv2fDnz8Z2ejm3?usp=sharing>

4) A set of three videos have been recorded for the e-learning portal of the Technical University of Liberec. The videos collect an extended lecture on the generation of nanoparticles by laser ablation provided to the students of the course Introduction to the study of nanomaterials (2020/2021).

Initially, these videos were intended to support the students who have the lecture:

<https://elearning.tul.cz/enrol/index.php?id=7902>

However, now these videos are serving as complementary teaching material for students of the course Introduction to the study of nanomaterials offered by the Institute of New Technologies and Applied Informatics from the Faculty of Mechatronics Informatics and Interdisciplinary Studies at the Technical University of Liberec.

The set of original 3 videos can be downloaded from:

https://drive.google.com/drive/folders/1Xk2Aji9b5XNmAIP53a91e4EhCa_K2Nhn?usp=sharing

5) A set of two videos have been recorded for the Federal University of São Carlos in Brazil. The videos collect a didactical explanation of the segregation of metals from photosensitive semiconductors and what they could be used for. These videos were produced by the Open Laboratory of Interactivity for the Dissemination of Scientific and Technological Knowledge (LABI) at the Federal University of São Carlos in Brazil. All rights belong to the Federal University of São Carlos. The set of videos can be watched in the following links:

https://www.youtube.com/watch?v=k9r0d8v7RyM&ab_channel=CDMFFAPESP

<https://www.youtube.com/watch?v=CBKEH46V4Yk>

6. Mimoř. pedag. aktivita (kurs Athens, Erasmus předn. pobyt) max.

1) Lecturer of a short course entitled "Laser-mediated Synthesis of Nanomaterials: a Clean Pathway", Federal University of São Carlos, Brazil 2020.

2) Lecturer of a short course entitled "Laser-mediated Synthesis of Nanomaterials", Rajamangala University of Technology Thanyaburi, Thailand 2023.

7. Další pedagogická činnost

1) Lecturer of the seminar "Laser-induced synthesis of nanomaterials", Federal University of São Carlos, Brazil, 2020.