

FRAMEWORK PROGRAMME OF EARLY STAGE RESEARCHER TRAINING¹

1. BASIC DATA

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|---|--|--|------------------|
| Mentor's name and surname | Željko Knez | Mentor's register number at ARIS (SICRIS) : | 02619 |
| Mentor's e-mail: | zeljko.knez@um.si | Mentor's tel. no.: | 041371666 |
| Research programme (RP) leader's name and surname: | Željko Knez | RP leader's register number at ARIS (SICRIS) : | 02619 |
| Title of research programme: | Sepration processes and product design | RP's Register number at ARIS (SICRIS) : | P2-0046 |
| Research organisation (RO) of University of Maribor, where training shall be conducted: | FKKT UM | RO Register number at ARIS (SICRIS) : | 0794 |
| Research field according to ARIS classification : | 2.02.02 | Research field according to Ortelius classification (EURAXESS) | 168 |

2. DEFINITION OF RESEARCH PROBLEM AND GOALS OF DOCTORAL RESEARCH²

Starting point of research task of the early stage researcher and its position in the research programme, where the mentor is included, work hypothesis, research goals and foreseen result with emphasis on an original contribution to science:

The importance of supercritical fluid technology (SFT) in various industries has made it the subject of intense research in recent decades. Solubility is a key concept in SFT. Gaining knowledge of the theoretical concepts of solubility and related experimental measurement methods can be useful for the development and improvement of the quality of research in this field. The candidate will carry out experimental work on the solubility of substances in supercritical fluids and will investigate important phenomena in this field, including phase behaviour at ultra-high pressures. He/she will

¹ Term early stage researcher (ESR) is written in male form and used as neutral for women and men.

² Research and study programme of training have to harmonise with contents of the research programme, where the mentor is a member.

use previously unexplored experimental measurement methods, modelling and molecular simulation of solubility.

Keywords: solubility; supercritical fluids; high-pressure phase behaviour; experimental measurement methods; molecular simulation.

3. STUDY PROGRAMME

Foreseen study programme, to which early stage researcher shall be enrolled in academic year 2024/2025:

Chemistry and chemical engineering

4. DESCRIPTION OF WORK AND TASKS

Carry out work and tasks in accordance with the UM systematisation.

5. REQUESTED LEVEL OF EDUCATION

VII/2

6. REQUESTED FIELD OF EDUCATION

Chemical engineering, chemistry, natural sciences

7. KLASIUS SRV

Level 7: Second-level higher education and similar training/second-level higher education and similar training

8. KLASIUS P

5249 Chemical technology and process engineering (other)

9. REQUESTED KNOWLEDGE

Computer skills, chemical engineering skills, laboratory techniques

10. REQUESTED SPECIAL REQUIREMENTS

Experiencing experimental work in the laboratory

11. REQUESTED LANGUAGES

Active knowledge of one world language

12. REQUESTED WORK EXPERIENCE

Kliknite ali tapnite tukaj, če želite vnesti besedilo.

13. FORESEEN POSTDOCTORAL TRAINING

Kliknite ali tapnite tukaj, če želite vnesti besedilo.

Mentor's signature:

Research programme leader's signature:

Name and surname of Dean or
authorised person³:

Prof. Dr. Zoran Novak

Signature of dean or authorised person:

Place and date:

Maribor

27. 02.
2024

Stamp:

³ The training program is signed by the dean of the member where the ESR's employment and training will take place.