



University of Stuttgart
Germany

Fellow	Host Institution No.1: University of Stuttgart Host Institution No.2: Técnicas Reunidas SA	Country: Germany Country: Spain
DC11	Supervisor (academic): Prof. Joerg Starflinger Supervisor (industrial): Carlos Gutiérrez Muñoz	WP No: 3
Title: Fundamental study of pseudo-condensation of sCO ₂		
Research Objectives: (1) To investigate the pseudo-condensation of sCO ₂ . (2) To experimentally investigate the condensation near the pseudo-critical point. (3) To thoroughly assess the data incl. error propagation analysis. (4) To develop a best practice correlation (or look-up table) for designers of heat rejection unit (cooler).		
Mobility rules (eligibility of applicants): more information here <ul style="list-style-type: none">• Researchers funded by Doctoral Networks should comply with the mobility rules: in general, they must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting organisation for more than 12 months in the 36 months immediately before their recruitment date¹.• In addition, they:<ul style="list-style-type: none">○ must not have a doctoral degree at the date of their recruitment.○ can be of any nationality.		
Applicant - specifications: in addition to the general specifications (eligibility criteria) listed above, the applicant must feature the following requirements: <ul style="list-style-type: none">• Earned degree:<ul style="list-style-type: none">○ MSc in Mechanical Engineering (or related area). Preference will be given to candidates with a major in energy or related areas• Background (mandatory):<ul style="list-style-type: none">○ Thermodynamics○ Fundamentals of Heat Transfer○ Fundamentals of Measurement Technology○ Matlab/Python programming○ Fundamentals of CFD• Additional background that will be valued in the selection process:<ul style="list-style-type: none">○ Experience in performing experiments○ Data acquisition (e.g. Labview)○ Sensitivity and uncertainty analyses• English language:<ul style="list-style-type: none">○ A certified C1 level of English is required		

¹ This rule applies to the first contract only (University of Stuttgart)





Scheme:

- M1-M24: the applicant is employed by University of Seville
- M19-M24: the applicant is seconded to Fives Cryo
- M25-M36: the applicant is employed by Técnicas Reunidas SA, without undergoing another selection process

Locations (place of work):

- M1-M18: the applicant will be employed by University of Stuttgart and located at the Institute of Nuclear Technology and Energy Systems:
Pfaffenwaldring 31, D-70569 Stuttgart (Germany)
Google Maps: <https://goo.gl/maps/sPvuz18QvuAzpuUFA>
- M19-M24: the applicant will be employed by Técnicas Reunidas SA:
Parque Empresarial Adequa, Edificio 6.
Avenida de Burgos 89, 28050 Madrid (Spain)
Google Maps: <https://goo.gl/maps/vE12ngXUGso7rqEw8>
- M25-M36: the applicant will be seconded to Fives Cryo:
25B Rue du Fort, 88190 Golbey (France)
Google Maps: <https://goo.gl/maps/HxhPacN91b6y8D9S9>

Planned secondments: DC11 is expected to carry out the following secondment:

- Fives Cryo: Finite elements modelling of thermomechanical stresses in the heat exchangers. Investigate fatigue issues of the heat exchangers due to high thermal gradients in sCO₂ applications

How to apply: submit application package (see below) to Prof. Jörg Starflinger (joerg.starflinger@ike.uni-stuttgart.de) before May 31st 2020, 17:00 h CET.

The Application Package is comprised of:

- CV Europass (<https://europa.eu/europass/en/create-europass-cv>)
- Letter of motivation
- *Analysis of the challenges faced by the energy sector to accomplish Carbon Neutrality by 2050, and the associated needs for technology development* (max 3 pages)
- Short video (less than 2min): *why I should be selected for the position.*
 - D1: Why did you decide to apply for a position in ISOP?
 - D2: What do you expect/want to gain from an MSCA programme?
 - D3: How do you think you can add value to an MSCA programme?
 - D4: Summarise your strengths and weaknesses.
 - D5: Describe a time when you had to deliver a challenging project. What was your role and what was the outcome?
 - D6: Where do you see yourself in 10 years?
 - D7: Why should you be selected for the position?
- Letters of recommendation (not mandatory)





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- The application package must not exceed 15 Mb

Contract:

- Start date (estimate): September 2023
- Type: full-time exclusive
- Annual gross salary:
 - University of Stuttgart: € 38,400.00
 - Técnicas Reunidas S.A.: € 33,800.00
- An additional (family) allowance is available for candidates who have family obligations (applied from and until this condition applies)

Equal Opportunity Employers:

University of Stuttgart and Técnicas Reunidas S.A. are Equal Opportunity Employers. We believe that no one should be discriminated against because of their differences, such as age, disability, ethnicity, gender, gender identity and expression, religion or sexual orientation. All employment decisions shall be made without regard to age, race, creed, color, religion, sex, national origin, ancestry, disability status, sexual orientation, gender identity or expression, genetic information, marital status, citizenship status or any other basis as protected by European laws.

