

## GLOBAL TRAINING PROGRAMME

### FORM 1 APPLICATION FORM: GLOBAL TRAINING PROGRAMME

REFERENCIA: EHU21

CORPORATIVE INFORMATION			
Name of the company		JOANNEUM RESEARCH Forschungsgesellschaft mbH	
Contact Person		Rita Eckhard	Email:
Location	Country	Austria	
	City	8712 Niklasdorf	
	Address	Leobnerstrasse 94	
Sector		RIS3 sector: ADVANCED MANUFACTURING	
PROPOSED INTERNSHIP INFORMATION			
Number of trainees to host (in case you want more than 1 trainee, indicate the different departments where they will work)		1	
Extension time (extra months and salary) OPTIONAL  <i>SEE DOCUMENT: "FORM 2_Global Training 2024 extension preliminary agreement"</i>	Extra months	5-6	
	Monthly payment for extra months (between 0-1600€/month)	see APPLICATION FORM 2 according to our COLLECTIVE AGREEMENT for employees in non-university research 2024	
INTERNSHIP/PLACEMENT INFORMATION			
Department		MATERIALS - Institute for Sensors, Photonics and Manufacturing Technologies, Research Group: Laser and Plasma Processing	
Description of project/activities		<p>Surface energy plays an important role in research and many areas of industry such as medical technology, the construction industry and food packaging. In particular, extremely water-repellent surfaces ("superhydrophobic" water contact angles &gt;150°) offer a self-cleaning effect ("lotus effect") and minimize the soiling of product surfaces. There are currently only a few processes for producing surfaces with a defined surface energy that meet industrial and economic requirements such as cost-effective, fast and easy integration into a production chain. In addition, climate change requires sustainable, environmentally friendly solutions, which wet-chemical processes and printing techniques such as screen printing cannot offer due to long drying times, among other things.</p> <p>This intended work is part of a research project and aims to produce and characterize bio-based, environmentally friendly, superhydrophobic coatings on various wood substrates using atmospheric pressure plasma coating technology. The coatings should exhibit high resistance to environmental influences in combination with very good adhesion to the substrate. The coatings are to be produced with the addition of silicon-containing aerosols (precursors) and bio-based materials such as waxes.</p> <p>The activities of the candidate could be related to:</p> <ul style="list-style-type: none"> <li>■ - Literature review</li> <li>■ - Statistical design of experiments</li> <li>■ - Coating tests on the atmospheric plasma coating system</li> <li>■ - Coating characterization (coating thickness, adhesion, chemical, structural and topographical coating structure, wetting behavior and surface energy, environmental resistance, abrasion resistance)</li> <li>■ - Development of the influence of process parameters on the film structure and film properties</li> </ul>	

	<ul style="list-style-type: none"> <li>- Evaluation, presentation and summary of the results, writing of reports</li> </ul>
COMPETENCES, SKILLS and EXPERIENCE REQUIREMENTS	
<b>Requested profile(s) information</b> (Studies, previous experience, language skills, other skills...)	<b>Studies</b> The candidate should possess the following qualifications: <ul style="list-style-type: none"> <li>- M.Sc. in (organic) chemistry, physics, material sciences</li> <li>- Knowledge in the field of plasma-assisted chemical vapor deposition (PACVD)</li> <li>- Expertise in surface and layer characterization</li> <li>- Ability to work in an international and multidisciplinary team</li> </ul>
	<b>Language skills</b> Language skills: Proficiency level in English is necessary, basic level of German would be highly valued.
	<b>Other</b> <i>(professional experience, software, other skills...)</i> No advanced knowledge of plasma equipment technology is required, but creativity, a flair for experimental work and the operation of technical equipment are a great advantage.
<b>Other commentaries</b>	We offer a team-oriented working atmosphere and state-of-the-art infrastructure, flexible working hours (flexitime without core hours), additional full days off on Good Friday, 24.12. and 31.12., attractive social benefits such as sports and cultural promotion, mobility allowance, company events, etc.

COMPANY/INSTITUTION	SIGNATURE	DATE
<b>REPRESENTATIVE :</b>	JOANNEUM RESEARCH Forschungsgesellschaft mbH  	16.05.2024

Erwin Kubieta, 16.05.2024 11:03  
 Digital signiert gem. EU Reg. No 910/2014

Renate Agnes Reinisch, 16.05.2024 10:00  
 Digital signiert gem. EU Reg. No 910/2014

**INFORMATION ABOUT THE COMPANY/INSTITUTION**

<p>LOGO</p>	
<p>WEBSITE</p>	<p>www.joanneum.at</p>
<p> <b>INFORMATION ABOUT THE CITY AND THE AREA WHERE THE COMPANY/STITUTION IS LOCATED</b>         (General information about SECURITY, ACCOMODATION, PUBLIC TRANSPORT...)     </p>	<p>       The Research Group Laser and Plasma Processing of the Institute MATERIALS of JOANNEUM RESEARCH Forschungsgesellschaft mbH is located in Niklasdorf. Niklasdorf is a small town in the vicinity of Leoben, which is one of main university centers in Austria (Montana University Leoben). JOANNEUM RESEARCH facility is reachable by bus (L810) and train (any S-line that goes from Leoben towards Bruck/Mur and Murzschlag stops in Niklasdorf). The train stops is 15mins walk from JR, while the bus stop in directly in front of the JR. In addition, in summer, bicycle ride from Leoben to JR is a very pleasant flat, 20min ride using a dedicated bike lane.     </p> <p>       Leoben accounts with the many student residents and single hotels for visiting researchers, professors and workers. Some of the most comfortable are Mineroom (<a href="#">link</a>), Greenbox (<a href="#">link</a>), Living Campus (<a href="#">link</a>), etc. The common price for a single person is 300-350€/month, including costs of light, hot water, internet and many additional facilities such as laundry, gym, bicycle rent for free, etc.     </p> <p>       Finally, Leoben is a very pleasant, vivid and small-size town of 25.000 inhabitants with a lot of outdoor activities (see: Mugel hike, Bärenschutzklamm, etc.) and a number of festivals, among other sponsored by a local brewery Gösser, one of the most important in Austria. Graz is a major town, capital of Styria, which is at 45min train ride from Leoben with trains scheduled every 30-40mins.     </p> <p>       As everywhere in Austria, personal security is at the outmost level. Due to COVID regulations, there might be some restrictions, but at the same level of other EU countries.     </p>
<p>GENERAL INFORMATION ABOUT THE COMPANY/INSTITUTION</p>	<p>       JOANNEUM RESEARCH is a professional innovation leader and technology provider. It is distinguished by its entrepreneurial focus and a track record of 30 years of cutting-edge research at an international level. Its key role is to facilitate the transfer of technology and knowledge in South East Austria. For these reasons, it is ideally suited for applied research and technology development. JOANNEUM RESEARCH networks with members of the national and international scientific and research communities. It is a recognised research partner whose scientific work meets the highest international standards. It supports companies in the development of technologies and processes. In this way, it makes a decisive contribution to securing and increasing the competitiveness of Styria and Carinthia as a location for research, innovation and business. The MATERIALS - Institute provides a link between the development of large-scale processes and industrial application. By forming strategic partnerships with regional and international partners in science and industry, MATERIALS develops comprehensive, interdisciplinary solutions to problems in the fields of optical applications, medical technology and many other applications.     </p>
<p>SIZE OF THE COMPANY (EMPLOYEES)</p>	<p>~ 500</p>
<p>NUMBER OF PEOPLE AT THE DEPARTMENT WHERE THE TRAINEESHIP WILL TAKE PLAKE</p>	<p>~ 25</p>

<p><b>MAIN ACTIVITY OF THE COMPANY/INSTITUTION</b></p>	<p>JOANNEUM RESEARCH's institute MATERIALS - Institute for Sensors, Photonics and Manufacturing Technologies is dedicated to the applied materials research.</p> <p>Main activities include development of new materials for Additive Manufacturing, more particular powder-bed and powder-blown metal 3d printing. The value chain includes design optimization, process planning, process simulation, manufacturing with inline monitoring and postprocessing.</p>
<p><b>A BRIEF EXPLANATION OF MAIN PROJECTS</b></p>	<p>JOANNEUM RESEARCH Institute MATERIALS - Research Group Laser and Plasma Processing:</p> <ul style="list-style-type: none"> <li>• crystAlr (FFG TakeOff, 2022-2025): Artificial Intelligence- and sensing-driven combustion burner</li> <li>• LaSPAM (FFG TakeOff, 2021-2022): Novel postprocessing for fatigue and hydrogen resistance of Additive Manufacturing aircraft materials</li> <li>• QuaL-DED (FFG-PdZ, 2020-2023): Total quality control of laser Directed Energy Deposition process for zero-defect components</li> <li>• Join!SLM-ticfk (FFG-Take Off, 2020-2022): Entwicklung von an die Nachgiebigkeit von CFK-Laminaten angepasste TiAl6V4-Inserts für höchste Ermüdungsfestigkeit</li> <li>• 3D Aerotip (FFG-Take Off, 2017-2020): Additive manufacturing for innovative titanium components for the aviation industry.</li> </ul>
<p><b>PREVIOUS COLLABORATION IN INTERNSHIP/TRAINING PROGRAMMES?</b></p>	<p>JOANNEUM RESEARCH Materials is participating for the fifth time in this internship project. In the year 2017/2018 we participated the first time and hosted two students: Elena Gonzalez and Asier Alvarez. Asier is still in Weiz, doing a PhD in microfluidic simulation. In the year 2018/2019 we also participated and Izar Gorroñoigoitia Uribarren was doing her internship. She left after 12 month for a research job in Basque country. In the year 2019/2020 we were hosting again two students: Jon Ostolaza and Mikel Arocena. Mikel prolonged his internship for 6 months and and was then employed for about a year as a member of our scientific staff. In the year 2022/2023 we were hosting Conzalo Lucas Herran at our Niklasdorf site. Within the current programme period (2023/2024), we are currently hosting Angela Diez Sanches at our Niklasdorf site.</p>
<p><b>OTHER COMMENTARIES</b></p>	