Job posting

Type of position

☒ scientific
☐ administrative

Target group

☒ graduates
☐ post docs
☐ other

Title

PhD POSITION (F/M/X) FOR PLASMA-FLUID MECHANICS
PLASMA SOURCE CONCEPTS

Institution

RESEARCH AND DEVELOPMENT
FROM IDEA TO PROTOTYPE

Our institute ranks among the largest and most modern institutions in the field of low-temperature plasmas worldwide. In an international working environment, we conduct socially relevant research within our core areas Materials & Energy and Environment & Health. Currently the INP employs about 200 scientists and staff at three locations (Greifswald, Rostock and Karlsburg).

Position

To advance towards a deeper understanding of the complex interaction between cold atmospheric plasma discharges (e.g. for medical application) and the surrounding fluid(s) as well as potential medical flows in general, the INP is going to build up a new gas flow test-rig. Initially, an older setup has to be modified into a versatile, stand-alone test setup for complex flow regimes. Primary focus of the test-rig are optical measurement techniques (such as 2D-2C PIV and spectroscopy). However, more common measurement techniques (pressure, volume flow, temperature) are going to be implemented as well. With an integral approach in mind, additional CFD simulations will go in parallel to the experiment. Using proven in-house plasma sources, the test rig is iteratively adapted to answer first questions regarding plasma-jet / fluid interaction.

We offer a PhD position in Karlsburg near Greifswald, starting on 1st January 2022 as

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Fixed term contract for 3 years / Part-time appointment (26,67 hours/week) / Target salary: TV-L/E13
Responsibilities

- You design and built a gas flow test facility with integrated control-loops and adaptable interfaces for multiple experiments.
- You do CFD simulations for the crucial parts within the test facility and evaluate them with experimental data.
- You use your setup to take the first step into a deeper understanding of plasma discharge / fluid interaction using proven in-house plasma sources.
- You get familiar with top-notch measurement techniques, such as PIV, Fast-framing, robotics & advanced control-loops.
- You interact with an interdisciplinary team from physicists to medical stuff including the presentation of scientific results.
- You present your scientific results on scientific conferences and publish them in peer reviewed journals.

Requirements

- Very good university-level qualification (Master of Science degree) in mechanical engineering or comparable subject areas
- Experienced with computational tools such as CAD, CFD
- Experienced with CAM manufacturing tools (milling machine, lathe)
- Experienced with Rapid Prototyping (3D printing, FFF, SLA)
- General Knowledge of measurement and control systems
- Advanced programming skills in Python for data evaluation and more (ROS would be advantageous)
- Analytical competencies and solution-oriented thinking
- Fluent English, advanced German
- Experienced team worker, willingness and enthusiasm for independent work
- Very high communication skills, individual initiative and extraordinary engagement are required.

Application procedure (deadline etc.)

OUR OFFER FOR YOU:

- Compensation according to the collective salary agreement of Länder (TV-L) including employer contributions to medical and dental insurance, maternity leave and retirement benefits
- Creative work environment
- Technical facilities of the highest standard
- Thesis advisory committee: experienced and professional assistance throughout your PhD from INP and special consultancy from KIT
- Opportunities for professional development (e.g. project management, acquisition of third-party funding)
- Networking opportunities at national and international conferences and further research groups within the field
- Possibility of developing and implementing own project ideas
- Flexible working hours and mobile working offers
- 30 vacation days per year (plus: December 24th and 31th)
- Sports courses in our institute rooms
HOW TO APPLY
Please apply with the common documents (cover letter, CV, references) giving the keyword „0445 PhD Position Plasma-Fluid Mechanics“- preferably via our online application form - until 30th November 2021.

Your performance and personality matters regardless of your age, origin, gender, sexual identity, disability or ideology. We look forward to receiving your applications!

The INP wants equal participation of men and women, especially in science. There are many good reasons why it is worthwhile to promote the potential of women specifically. Qualified women candidates are explicitly called to apply. Handicapped applicants will be preferred in case of equal qualification.

Contact
For further information and inquiries, please contact Dr.-Ing. Philipp Mattern (email: philipp.mattern@inp-greifswald.de, phone: +49 38355 6686 2500).

Please send your applications to*:

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* Unfortunately, we cannot refund any of your expenses for applications and job interviews due to budgetary regulations.