



Universiteit Utrecht



Technische Universiteit  
Eindhoven  
University of Technology

## Vacancies

The strategic Alliance between Eindhoven University of Technology (TU/e), Utrecht University (UU) and UMC Utrecht (UMCU) has awarded a grant for a 4-year multidisciplinary research program in the field of plasma medicine. The research team will combine expertise in physics, chemistry, cell biology and medicine to gain an in-depth understanding of non-thermal plasmas and how they affect cells and tissue. The final aim is to develop and improve applications of non-thermal plasmas to combat multidrug-resistant bacterial infections and cancer.

The 4-year program will be jointly carried out by research groups from TU/e, UU and UMCU with a newly appointed researcher in each of the institutions. Specifically, we are inviting applications for

### 3 positions at the level of assistant professor

#### General requirements

We are looking for enthusiastic, ambitious and proactive individuals that are very open to interdisciplinarity, as this is the basis for the program. They should work together as a team and they are expected to gain a good working knowledge of the techniques and approaches used by the other candidates. They are expected to apply for funding and to develop their own research lines. They should have affinity for teaching and will be involved in setting up joint teaching modules within the three institutes.

#### Vacancy 1. Position at TU/e in the field of plasma physics

##### Job description

You will perform numerical simulations of non-thermal atmospheric pressure plasmas in contact with (complex) targets such as water and tissue. The work is result-driven, meaning that it will be essential to provide your co-workers at UU and UMCU with particle fluxes and densities at the plasma-target interface, in a system that represents reality as close as possible. Working closely together with experimentalists in the field of plasma physics as well as biology and medicine is at the core of this position.

##### Specific requirements

You have a background in plasma physics and plasma simulations with at least one year of post-doc experience in plasma simulations. Experience with modelling and simulations of non-thermal atmospheric-pressure plasmas is an important asset.

##### Further information

For further information you may contact Dr. Ana Sobota (TU/e), e-mail: [a.sobota@tue.nl](mailto:a.sobota@tue.nl), or prof. dr. Gerrit Kroesen (TU/e), e-mail: [g.m.w.kroesen@tue.nl](mailto:g.m.w.kroesen@tue.nl)



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## Vacancy 2. Position at UU/UMCU in the field of microbiology

### Job description

You will investigate the molecular mechanisms underlying the bactericidal activity of non-thermal plasmas with a special focus on the role of membranes. In close collaboration with your coworkers from TU/e, UU and UMCU, you will investigate how the bactericidal properties of plasmas can be modulated and you will search for conditions at which plasmas effectively kill bacteria without harming human cells.

### Specific requirements

You have a background in microbiology, (bio)chemistry, or cell biology, with expertise in one or more of the following areas: membrane biochemistry, membrane biophysics, model membranes, oxidative processes in cells, plasma chemistry, antibiotics, multidrug resistance.

### Further information

For further information please contact prof. dr. Antoinette Killian (UU), e-mail: [J.A.Killian@uu.nl](mailto:J.A.Killian@uu.nl), dr. Eefjan Breukink (UU), e-mail: [E.J.Breukink@uu.nl](mailto:E.J.Breukink@uu.nl) or prof. dr. Jos van Strijp (UMCU), e-mail: [j.vanstrijp@umcutrecht.nl](mailto:j.vanstrijp@umcutrecht.nl)

### Applying

The position is open for applications via the following link: [Assistant professor in the field of \(membrane\) microbiology \(1.0 FTE\)](#)

## Vacancy 3. Position at UU/UMCU in the field of cell biology

### Job description

You will characterize the molecular mechanisms involved in the proposed selective toxicity of plasmas for killing cancer cells. In close collaboration with your coworkers from TU/e and UU, you will investigate how the treatment with plasma can be optimized and you will search for the best conditions at which plasmas kill cancer cells without harming normal cells. These studies will be initiated with 2D cell cultures, followed by studies in 3D cultures, organoids, organoids in mice, until studies on human tissue.

### Specific requirements

You have a background in molecular and cell biology, biochemistry, and/or biomedical sciences. You also have expertise in one or more of the following areas: in vitro toxicity studies, in vivo models of cancer, oxidative processes in cells, and plasma chemistry.

### Further information

Additional information can be obtained from dr. Sabrina Oliveira (UU), e-mail: [S.Oliveira@uu.nl](mailto:S.Oliveira@uu.nl), or prof. dr. Paul van Diest (UMCU), e-mail: [P.J.vanDiest@umcutrecht.nl](mailto:P.J.vanDiest@umcutrecht.nl)