PhD Student Position (f/m/d) in Biomedical Engineering  
"Impedance characterization for scar and fibrosis detection"

Job description:  
We seek a PhD candidate (f/m/d) within the European Marie Skłodowska-Curie International Training Network PersonalizeAF. PersonalizeAF aims to change the paradigm of classification and diagnosis of atrial fibrillation delivering a precision medicine strategy based on the personalized characterization of each atrial substrate and disease manifestation. The consortium provides a multinational, multi-sectorial, multidisciplinary and excellent doctoral training network programme. Early Stage Researcher (ESR) #2 will work on the project "Impedance characterization for scar and fibrosis detection"

Objectives of ESR2:  
Regions of scar and fibrotic tissue have been identified as a potential driving region of arrhythmic activity during AF. High density mapping in the electrophysiology lab can deliver important information about areas of low voltage and slow conduction, both characteristics of these driving areas. Impedance measurement can be practically implemented on intracavitary recordings and provide the information required to locate these regions, as changes in conductivity may indicate alterations in myocardium functionality.

Expected results of ESR2:  
A multi spectral impedance measurement system and catheter will be developed and used to study the relation between the different tissue mutation of the myocardium, especially scar and fibrotic, as means to better characterize the tissue.

Planned secondments ESR2:  
Université de Bordeaux; Institut d’Investigacions Biomèdiques August Pi I Sunyer (Barcelona); ADAS3D (Barcelona)

PersonalizeAF brings together universities, companies and hospitals from 7 European countries (Italy, Spain, France, the Netherlands, Norway, Germany and Great Britain). PersonalizeAF will integrate data and knowledge from in-vitro, in silico, ex vivo and in vivo animal and human models to: 1) generate an individual description of the state of the atrial muscle identifying the disease mechanisms and characteristics; 2) understanding the potential effect that different therapies have on different atrial substrates; and 3) combining this information to generate a specific profile of the patient and the best therapy for each patient.  
PersonalizeAF aggregates scientific staff from the academic and clinical world with highly specialised biomedical companies which will be involved in a high-level personalised training programme that will train a new generation of highly skilled professionals and guarantee ESRs and future PhD students outstanding Career Opportunities in the biomedical engineering, cardiology services and medical devices sectors.
For further information, take a look at [www.personalizeaf.net](http://www.personalizeaf.net)

**Eligibility:**
Candidates hold a Master degree (or equivalent) in Computer Science / Engineering / Applied Mathematics / Physics.
- ESRs shall, at the time of recruitment by the host organization, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.
- Researchers must not have resided or carried out their main activity in the country of their host organization for more than 12 months in the 3 years immediately before the recruitment (mobility rule).

**Salary:**
The remuneration occurs on the basis of the wage agreement of the civil service in TV-L E13. Employer social security contributions will be deducted.

**Institute:**
Institute of Biomedical Engineering (IBT)

**Contract duration:**
limited, three years (might be extended)

**Starting date:**
as soon as possible

**Application up to:**
April 15th 2020

**Contact person in line-management:**
For further information please contact Prof. Dr. Olaf Dössel, email: olaf.doessel@kit.edu or Dr. Axel Loewe, email: axel.loewe@kit.edu.

**Application:**
Please apply online via the central recruitment page of the PersonalizeAF ITN: [https://personalizeaf.net/recruitment](https://personalizeaf.net/recruitment)

KIT is an equal opportunity employer. Women are especially encouraged to apply. Applicants with disabilities will be preferentially considered if equally qualified.

KIT is certified as a family-friendly university (familienfreundliche Hochschule) and offers part-time employment, leaves for family-related reasons, dual career options, and individual coaching for family-work balance.