Announcement of a Postdoctoral Position

Workgroup

The postdoctoral position is linked to a project of the Czech Science Foundation entitled *Optimal Electromagnetic Design Based on Exact Reanalysis*. The main goal of the project is to develop and study a new paradigm of shape synthesis in electromagnetism based on a memetic combination of local and global optimization algorithms. The hosting body (Computational Electromagnetics Group, CEM) is a small, active group of young researchers affiliated with the Department of Electromagnetic Field at CTU FEE in Prague.

Workplace

Czech Technical University in Prague is the largest polytechnic in Czech Republic and its Faculty of Electrical Engineering (CTU FEE) is the leading scientific institution of its kind in the country. The university campus is located in Dejvice, a green, youthful, and vibrant neighborhood minutes away from Prague Castle and the historic Old Town and only 40 minutes from Prague airport. Prague, the capital of Czech Republic, is a beloved touristic destination known for its incredibly well-preserved architecture and rich history.

The Research Task

The main task intended for the postdoctoral researcher is to closely collaborate with the principal investigators of the group on the exact reanalysis technique for fast local shape optimization utilizing an impedance matrix stemming from a method of moment formulation. A new class of geometrical operators is to be adopted for volumetric method of moment and thoroughly tested on examples covering a wide area of plasmonic and photonic devices. It is expected that MATLAB packages will be developed during this task that will greatly enhance the actual design capabilities throughout the electrical engineering.

Required Skills

The announced postdoctoral position demands:
Postdoctoral Fellowship at CTU in Prague

- Fluent English with significant experience in writing scientific texts.
- Solid skills in MATLAB and \LaTeX.
- Background in electrical engineering or applied physics.
- Good understanding of the basic mechanisms underlying heuristic, combinatorial, and convex optimization procedures.

It is advantageous for the applicant to have a knowledge of

- electromagnetic field simulators CST and/or FEKO,
- numerical methods in electromagnetism,
- graph theory.

**Duration of the Postdoctoral Fellowship**

One-year contract with the possibility of an extension.

**Funding**

Salary is granted at the level of the average income in Prague (approx. 1.25× the national average salary). Details to be discussed during the interview.

The applicant has a chance to apply for additional funding to the Czech Science Foundation within the call for incoming postdoctoral researchers.

**Application**

Applications should be sent to miloslav.capek@fel.cvut.cz and lukas.jelinek@fel.cvut.cz with the subject “Postdoctoral Fellowship” and with all attachments in the PDF format. Mandatory attachments include the applicant’s Curriculum Vitae, the Doctoral thesis of the applicant, a copy of a published manuscript best characterizing the profile of the applicant, and two recommendation letters from supervisors/mentors/etc.

Use the aforementioned emails for any further queries regarding the position.

**Deadline**

The deadline for collecting all the applications is May 3, 2021. The start is possible right after the selection procedure.