

## **Postdoc in Mechanics and geometry of thin and slender structures**

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Applications are invited for a 2 year (1+1) postdoctoral position with a background in theoretical and computational mechanics, soft condensed matter physics, or Applied Mathematics. This project focuses on uncovering mathematical descriptions for use in the Japanese art of paper cutting, namely Kirigami, and Reticulated Structures. The research question is on how optimal geometric design leads to remarkable mechanical performance. Driven by a wide range of applications, materials with novel structural properties will be designed for diverse functionalities, which is of particular interest in the growing field of smart materials, where mechanical requirements must be satisfied while meeting sustainability and economic criteria. These are timely issues and most efficiently addressed by going beyond the ordinary properties of matter, towards engineered geometrical selection allowing the control of bulk properties. This is central to this work and we are looking for a candidate who is excited to contribute to the discovery of the next generations of advanced materials.

**The position is available from 1, January 2019 or as soon as possible hereafter.**

An ideal candidate must have a strong background in theoretical mechanics and/or applied mathematics, with a good knowledge about the mechanics of thin and slender structures (plates, shells, and rods), stability theory, and homogenization. Experience with analytical modeling, finite element/discrete element simulations, and willingness to take on activities involving table-top experimental mechanics are required. Knowledge of differential and computational geometry, 3D printing, Topology Optimization, and/or AUTO continuation software will be a plus. The successful candidate is expected to conduct an ambitious research program and engage in the interdisciplinary research with local and international groups. The initial appointment will be for one year with a possible one-year extension depending on the performance.

### **Educational qualifications**

The applicant must hold a PhD in Mechanical Engineering, Material Science, Physics, Applied Mathematics or a related discipline and has strong written and communication skills in English and a demonstrated publication record.

Application should contain a cover letter, describing how your experience and background meet the requirements for this position, CV, publication list, and name and contact information of two references.

### **Place of employment and place of work**

Place of employment is Aarhus University, and place of work is Inge Lehmanns Gade 10, 8000 Aarhus C, Denmark.

### **Further information**

Interested candidates are encouraged to contact Marcelo A. Dias ([madias@eng.au.dk](mailto:madias@eng.au.dk)) for further information.

### **Deadline**

All applications must be made online and received by:

30.11.2018

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