

Post Doc Position
Delft University of Technology
Industrial Design Engineering



Emerging Materials Section (DE)

Project Title:

Design Strategies to Introduce Bio-Based Materials to Society: A Case of Pulp-PLA

A Post Doc position is available at Delft University of Technology (TU Delft), Faculty of Industrial Design Engineering. The hire is a 2-year, fully funded position to research into the qualities of new and emerging bio-based materials and products, which enable them to be appreciated in multiple contexts when first time introduced to society.

Project description

Many studies have informed how we sense materials in daily products, how we attribute meanings to them, how they elicit emotions, and what they make us do. In line with product/user experience theories, these studies emphasize that material experiences are constituted on not just the material itself but how aspects of a product (e.g. form, function), social and cultural aspects of an individual, and setting (i.e. context) interrelate. Thus, although there are some socially and culturally embedded material meanings, such as regarding wood as warm and friendly, it is not possible to elevate these relationships into hard-and-fast rules: a material can elicit different experiences when applied in different products. However, there are some frequently occurring patterns in the ways we experience materials. These patterns show how different levels of materials experience (e.g. interpretive and sensorial) interrelate in specific ways; and how these experiences are shaped by the individual and compounded effects of particular consumer, material and product aspects. Understanding these “material experience patterns” in situations where a new bio-based material is appreciated will enable designers to envision and design for new situations where a desired consumer behaviour is likely to unfold. This will be the focus of this Post Doc position.

We expect that the Post Doc researcher will adopt a combination of interpretive (exploratory) and empirical research activities, which will be organised through a back and forth thinking between ‘*details*’, focusing on bio-based material properties and material development, and ‘*wholeness*’, focusing on product design and the way in which the material is approached from the perspective of consumers in a realistic context. Materials and products will be developed in synergy. While the explorative research will concern various types of bio-based materials (e.g. mycelium-based materials, algae-based materials), one specific material will provide experimental underpinning of the project: Pulp-PLA. The research will be conducted in collaboration with RISE research group in Sweden (<https://www.ri.se/en>).

Candidate eligibility:

Applicants should hold a PhD degree in the field of product design (engineering). Experience in research/education/design concerning materials and design, material-driven design and/or materials design, will be an advantage. A willingness to reach across scientific disciplines is essential; as are technical aptitude and a willingness to explore new areas of research as this Post Doc position includes communication with diverse disciplines (materials science and engineering, micro-biology, etc.). Excellent communication skills are essential. The candidate should hold an advanced level of English language, verbal as well as in writing.

Supervisors and location:

The candidate will be supervised by **Dr. Elvin Karana**, who will provide the expertise in material-driven design and materials experience research. **Dr. Mikael Lindstrom** from RISE Sweden will provide the expertise in materials science and engineering in relation to Pulp-PLA materials. The Post Doc candidate will be based in Delft University of Technology, Faculty of Industrial Design Engineering, and will have occasional visits to RISE research institute in Sweden.

How to apply:

Prospective applicants should submit their CV, certificates of their degree, contact details for 2 letters of reference, a covering letter (including motivation and preliminary research proposal, max 2 pages), and a design portfolio (if applicable). Total file size limit: 5 MB. Selected applicants will be invited for an interview for the second round assessment. Please send the following documents by e-mail to Dr. Elvin Karana (E.Karana@tudelft.nl).

Closing date: October 30, 2018