

## Postdoctoral position in NMR spectroscopy of natural and synthetically modified marine polysaccharides.

The NMR group in the National Institute of Chemical Physics and Biophysics (**KBFI**) in Tallinn, Estonia, has an opening for a postdoctoral position in polysaccharide NMR. Research will be carried out in close collaboration with the polysaccharide research group of Prof. Rando Tuvikene in the Tallinn University.

### Project summary:

The position will be part of a recently started Estonian Research Council funded 5-year project PRG1808 "Polysaccharide Based Biomaterials: Synergistic Combinations and Enhanced Functionalities" that is led by the Tallinn University. We will work towards elaboration of polysaccharide-based functional biomaterials, which have applications in biomedicine, pharmaceutical, cosmetic and food industries.

The position will focus on NMR characterization of polysaccharides and their preparations. Most work will be carried out by solution NMR, but solid-state NMR instrumentation and training will be available if needed. While working on NMR analysis, the candidate will maintain a close collaboration with the polysaccharide chemistry side of the project.

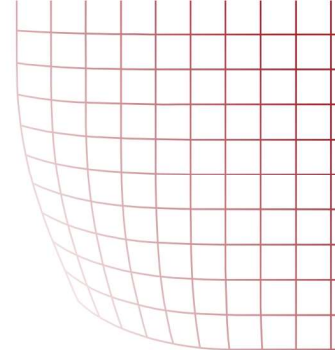
### Research Group:

The postdoctoral researcher will be integrated into the KBFI NMR research group and will be supervised by Dr Indrek Reile from KBFI in NMR and by Prof Tuvikene from Tallinn University in polysaccharide chemistry. The laboratory of Prof Tuvikene is among the leading groups in polysaccharide chemistry in the region, exposing the candidate to a diverse array of biopolymer and polysaccharide projects.

The NMR laboratory of KBFI is part of the Estonian national analytical chemistry research infrastructure and houses a diverse set of solution and solids NMR instrumentation. We currently operate 5 spectrometers ranging from a 200 MHz wide bore solids instrument to an 800 MHz cryoprobe equipped spectrometer. The current position will primarily utilize our 500, 600 and 800 MHz spectrometers, access to further instrumentation will be available in collaborating laboratories. Required sample preparation and chemical laboratory equipment will be available either on site in KBFI or in Tallinn University.

### The position:

The postdoctoral researcher will be hired as a full time Research Fellow of KBFI. The initial contract will be for one year, with a possibility to extend the contract thereafter. The contract



will include a monthly salary and 6 weeks of paid vacation annually plus typically the working days between Christmas and New Year.

### **The candidate:**

The candidate should hold a PhD degree in chemistry, NMR, materials/polymers science or related discipline. It is acceptable to apply while the degree has not been defended yet, but a successful defense by the time of starting in Tallinn is mandatory. Prior exposure to NMR and specifically to structural elucidation by NMR is desired. Prior experience in polysaccharide NMR or polysaccharide chemistry will be seen as a plus. Prior experience in some maintenance and manipulation of NMR spectrometers (e.g., changing a probe) would be beneficial. The candidate will be able to develop one's interests in solution (primarily) and solids (optionally) NMR characterization of polysaccharides and their preparations. He/she may also be exposed to polysaccharide chemistry and characterization by other techniques.

### **The location:**

KBFI is a non-teaching academic research institute situated about 7 km from city center of Tallinn, the capital of Estonia, and 10 km from the airport. It can be easily reached by public transportation. There are usually plenty of short stay or rental housing available within walking distances in the surrounding Mustamäe district.

### **To apply:**

Interested candidates should submit a CV, a motivation letter and a copy of their PhD certificate by email to Dr Indrek Reile ([indrek.reile@kbfi.ee](mailto:indrek.reile@kbfi.ee)). Informal enquires can be directed to the same address. Starting date is as soon as possible, but will be negotiable.

### **References:**

For examples of the polysaccharides in question and our prior work in the field:

1. Tuvikene, R., et al. (2015). "Funorans from *Gloiopeltis* species. Part I. Extraction and structural characteristics." *Food Hydrocolloids* 43: 481-492.
2. Robal, M., et al. (2017). "Monocationic salts of carrageenans: Preparation and physico-chemical properties." *Food Hydrocolloids* 63: 656-667.