

Imperial College London

Department of Bioengineering

Two Postdoctoral Positions in Auditory Biophysics: Optics & Theory

We welcome applications for postdoctoral candidates with expertise in optics, instrument development, or theoretical modelling who want to apply their skills in the field of the biophysics of hearing. Two positions in Dr. Andrei Kozlov's lab (www.kozlovlab.com) in the Department of Bioengineering, Imperial College London are supported by a five-year Wellcome Trust Investigator Award: one experimental and one theoretical.

We investigate mechano-electrical transduction by hair cells, the receptor cells of the inner ear. These cells can detect and amplify atomic-scale vibrations at thousands of cycles per second. We are interested in understanding the mechanisms underlying this extreme sensitivity. To achieve our goal, we combine novel experimental and theoretical approaches.

The experimental position will focus on developing new optical methods, including laser interferometry, and combining them with electrophysiology. Practical knowledge of optics or optomechanics is essential for this work. For more information about this kind of research, see Kozlov et al., *Nature*, 2011.

The theoretical position focuses on modelling mechano-electrical transduction, combining analytical and numerical techniques, and is in collaboration with Dr. Thomas Risler at Institut Curie in Paris. The successful candidate for this role will have a strong background and track record in Theoretical Soft Matter, Statistical Physics or a related discipline. For more information about this kind of research, see Gianoli, Risler and Kozlov, *PNAS*, 2017.

The positions will start between September 2019 and January 2020. Please send the names of three references, a CV with a list of publications and preprints, and an application letter describing your interests and skills. Informal inquiries are welcome.

Contact:

Andrei Kozlov

a.kozlov@imperial.ac.uk

Thomas Risler

thomas.risler@curie.fr