



Assistant Professor in Biophysics

Biophysics lab, Nano Life Science Institute, Kanazawa University, Kanazawa Japan

We are now recruiting a scientist as a non-tenured assistant professor of our Biophysics Lab in the newly founded Nano Life Science Institute (WPI-NanoLSI). We offer the opportunity to make experimental studies in a growing area of nano-probe biophysics, in which we study the dynamics of protein molecules, intracellular organelles and cells, using advanced high-speed atomic force microscopy (HS-AFM) and high-speed scanning ion conductance microscopy (HS-SICM). Last year the NanoLSI was adopted by JSPS as a World Premier International Research Center Initiative (WPI) and will be supported by JSPS for ten years. The aim of this entire project is found at <http://nanolsi.kanazawa-u.ac.jp/en/message/index.html>.

Specific projects: Our Biophysics Lab (<http://biophys.w3.kanazawa-u.ac.jp/index.htm>) has been developing and using HS-AFM to understand the dynamic action of protein molecules. We have been successful in gaining mechanistic insights that cannot be achieved in other ways. The tip-sample contact is weak enough to observe protein molecules on a solid substrate without disturbing their function. However, it is too strong to image protein molecules on very soft, mammalian cell membranes. To overcome this limitation, we have been developing high-speed/high resolution SICM that can image objects without making contact with them. Although this development is underway (the speed performance has already been improved 100 times), we expect to complete the technical developments in 2-4 years. We aim to make it possible to observe the dynamic action of protein molecules on the surfaces of intracellular organelles (such as mitochondria and Golgi apparatus) and live cells, and moreover, the dynamic action of proteins and their assemblies in the interior of unroofed cells. Your contribution will be some of: **1.** Development of SICM probes for high resolution. **2.** Preparation of proteins, intracellular organelles, cells and unroofed cells. **3.** Inspection and improvement of developed techniques. **4.** HS-SICM imaging of proteins, intracellular organelles, cells and unroofed cells. If you wish, you can focus on the application studies of HS-SICM.

Requirements: **1.** PhD in either biophysics, molecular biology, biochemistry, cell biology, related discipline, or engineering. **2.** Experience working with AFM or SICM would be advantageous but not obligatory. **3.** Self-motivated and yet able to work in a multidisciplinary team. **4.** Communication skills in English.

Important Dates: Application deadline, April 30, 2018; Start Date, June 1st, 2018 or as soon as possible thereafter.

Contract: Non-tenured full-time job. Three-year fixed-term contract. In the third year, your research activities will be evaluated. Depending on the result, the contract will be able to be renewed. The annual salary is 4,060,000 yen~6,496,000 yen. The amount is determined in accordance with the rules of Kanazawa University.

How to apply: Send the following documents to Toshio Ando (tando@staff.kanazawa-u.ac.jp) via e-mail, with a head line, NanoLSI Assistant Professor: **1.** CV with a recent photograph of the face, **2.** List of publications, presentations and other relevant activities, **3.** PDF files of published papers (up to three), **4.** List of research support (Time period, name of grant, title of education/research, and amount of money should be included), **5.** Motivation letter, **6.** Descriptions of your skills, previous studies (and teaching experiences: not mandatory) within two sheets, **7.** Reference letters from two scientists including a former academic supervisor.