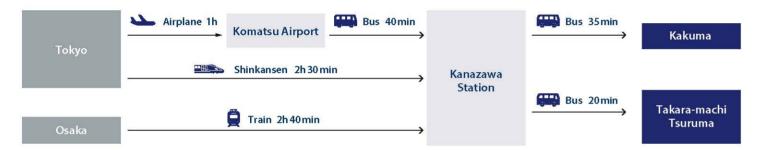
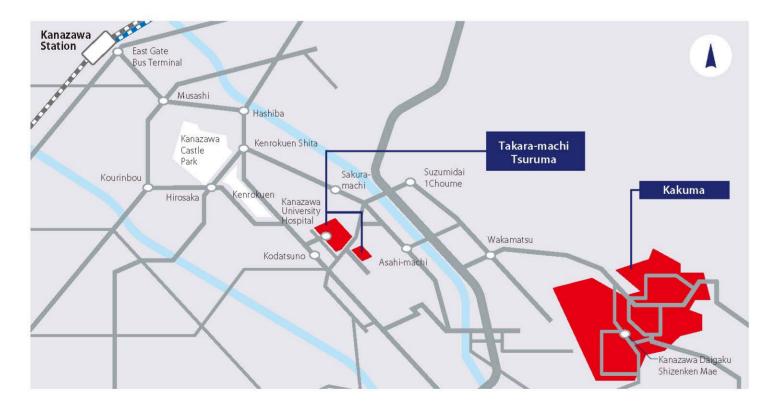
Access







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Nano Life Science Institute Kanazawa University

See Small, Think Big.Visualizing small things leads to big discoveries.







PROBING LIFE AT THE NANOSCALE

We aim to UNCOVER CELLULAR DYNAMICS through the development of nanoprobe technologies.

How cells function at the nanolevel remains one of the great unknowns.



Takeshi Fukuma Director of WPI-Nanol SI

Imaging techniques currently available have limitations in terms of resolution and quality that hinder deeper exploration. The Nano Life Science Institute (WPI-NanoLSI) is dedicated to advancing this frontier by building on pioneering technologies developed at Kanazawa University and by bringing together a 'dream team' of experts in nanometrology, life science, supramolecular chemistry, and computational science.

Our goal is to bridge our expertise in nanoscience with the live cell imaging field.

Successful visualization of nanoscale dynamics—the real-time workings of proteins, metabolites and other molecular assemblies-is widely anticipated to lead to breakthroughs in both fundamental biology and medical science.

Many aspects of human development, disease and aging are just beginning to be investigated from a nanoscale perspective. Until now, our knowledge of nanoscience has mostly been applied to the fields of materials science and energy science, with great success. We are now extending our capability to explore a wider range of fundamental biological phenomena at the nanoscale.

We hope to open up a new era of life science.

By combining the world's most advanced bio-scanning probe microscopy techniques and supramolecular chemistry, we are already developing new nanoprobe technologies. These technologies now mean scientists can go beyond the surface of cells and look deep into the interior at metabolites, nucleic acids and other building blocks of life. We would like to bring about dramatic advances in the life sciences field which will eventually lead to the establishment of a new research field, 'Nanoprobe Life Science.' NanoLSI welcomes enquiries from all those interested in delving into these unknown nanorealms.

Our Mission

Develop

Pls in

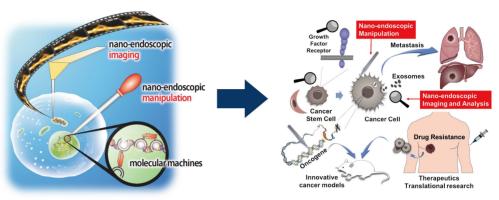
Computational

Adam S. Foster

Alexander S. Mikhailov

"nano-endoscopic techniques"

for the direct observation, analysis and manipulation of intracellular and cell-surface nanodynamics.



Understand the nano-level mechanisms of basic cellular functions and their

cancer-specific abnormalities.

Fusion of Research Fields





Atsushi Hirao

Computational

Nano Life Science

Nanoprobe

Computational

Science



Masanobu Oshima



Simulation

Takeshi Fukuma



Seiii Yano



Cancer Research

Life Science

Nanoprobe Life Science

Bio-SPM



Kunio Matsumoto Rikinari Hanayama



Chemistry

Supramolecule



Richard Wong



Miki Nakajima

Supramolecular

Nanomedicine

Supramolecular

Nanoprobe

Technology





Shigehisa Akine



Tomoki Ogoshi





Mark J.MacLachlan (The University of British Columbia)

I URA

Yuki Kunioka

I Nanometrology Noriyuki Kodera, Hiroki Konno, Yasufumi

Takahashi, Takahiro Nakayama, Mikihiro Shibata, Kazuki Miyata, Shinji Watanabe, Ayumi Sumino, Hitoshi Asakawa, Kien Xuan Non Yuanshu 7hou Avhan Yurtsever Takehiko Ichikawa, Marcos Penedo Garcia. Clemens Martin Franz

I Life Science

PIs in

Azuma Taoka, Hironori Kawahara, Tomoyoshi Yamano, Shinji Takeuchi, Tatsuki Fukami, Masataka Nakano, Hiroko Oshima, Ryu Imamura, Katsuya Sakai, Mizuho Nakayama Masaya Ueno, Masahiko Kobayashi, Yuko Tadokoro, Koji Fukuda, Masaharu Hazawa, Takeshi Yoshida, Hiroki Sato, Kee Siang Lim, Sha Shi, Yongjie Zhang

I Supramolecular Chemistry

Computation Nanometrology

Tomovuki Ikai, Tatsuva Nishimura, Takahiro Kakuta, Yoko Sakata, Sk Ikbal Asif, Rafael Rodriguez Riego, Shixin Fa

I Computational Science

Yuri F. Korchev

Holger Flechsig, Lei Yang

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