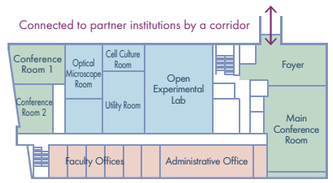
Floor map

Research Environment that Accelerates Research Integrations

Zoning the floor not by research groups, but by research needs, eliminates the barriers between groups to the utmost limit and accelerates research integrations.

Microscopy Labs	Concentratedly installation of SPMs and EMs in the basement floor for a suitable environment
Student and Faculty Collaboration Labs	Open laboratories with no research group barriers
Experimental Labs	Open experimental laboratories with no research group barriers
Foyer and Lounges	Open spaces that encourage interaction and dialogue



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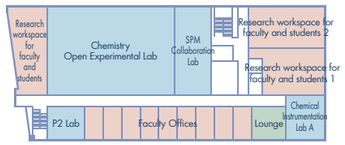

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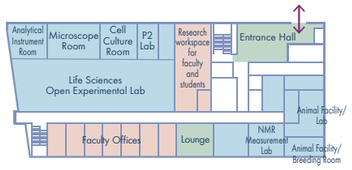

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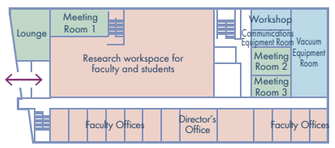

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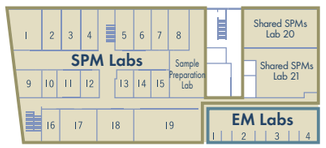


B1F

Photos (from top to bottom)

- Internal view of the connecting corridor
- External view of the connecting corridor
- External view of NanoLSI Research Building
- Life sciences open laboratory on the second floor
- SPM (Scanning Probe Microscopy)

NanoLSI
WPI KANAZAWA UNIVERSITY

Introducing the NanoLSI Research Building

Overview

Research Building

Structure	Reinforced concrete, five stories above ground and one basement floor
Building Area	1,371.79m²
Gross Floor Area	6,840.03m²

Connecting Corridor

Structure	Steel-framed, one story above ground, connected to the fourth floor of the research building
Building Area	213.78m²
Gross Floor Area	213.78m²

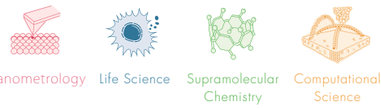
Birthplace of cutting edge knowledge

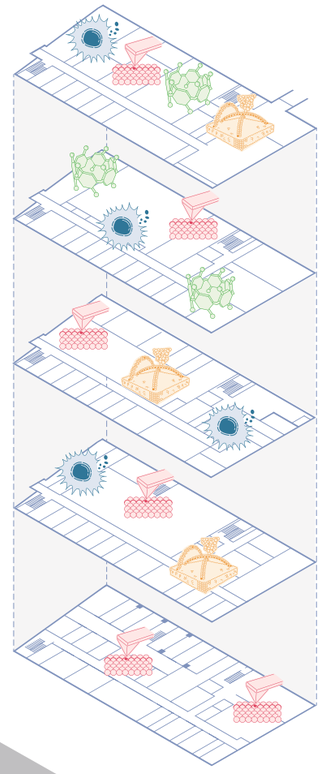
The goal of research at the Nano Life Science Institute (NanoLSI) is to gain insights into the fundamental understanding of the mechanisms governing life phenomena. Using cells—the basic units that make up living organisms—we conduct nanoscale observations of how molecules such as proteins and nucleic acids move on the surfaces and inside the cells at the atomic and molecular levels to elucidate how complex biological phenomena occur.

Scientists with expertise in nanometrology, life sciences, supramolecular chemistry and mathematical and computational sciences are spearheading this project. Notably, the scientists based at the NanoLSI are being joined by researchers from the Cancer Research Institute of Kanazawa University, and the Institute of Science and Engineering who are also participating in projects. Together, this team of highly active researchers interact regularly on a daily basis, transcending potential barriers of discipline, language, and position in a creative interdisciplinary research environment based on shared laboratory space without partitions between laboratories or groups.

The NanoLSI Building is an active hub for promoting interdisciplinary research by scientists from all over the world and with a myriad of expertise.

Researchers from four fields gather under one roof





4F
Computation & Interactive Dialogue Area

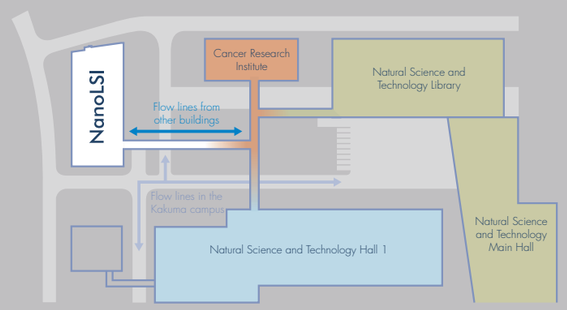
3F
Chemistry & Collaboration Area

2F
Life Sciences & Joint Research Area

1F
SPM & Transdisciplinary Discussion Area

B1F
SPM & EM Concentration Area

Connected by a corridor to the on-campus partnership organisation

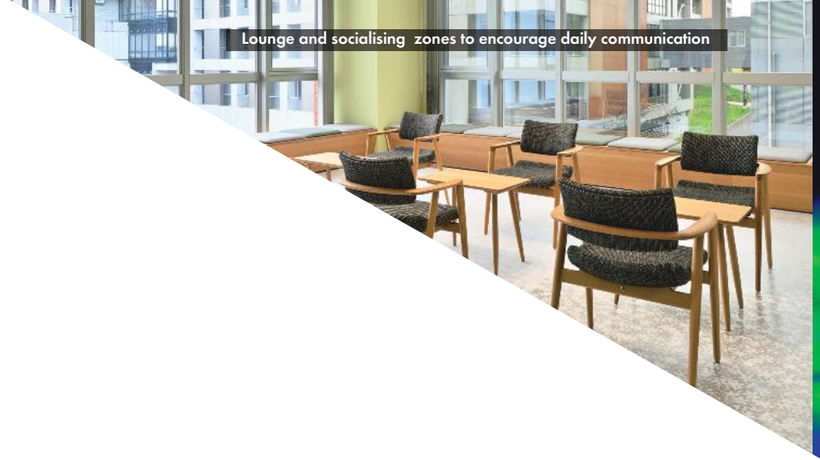


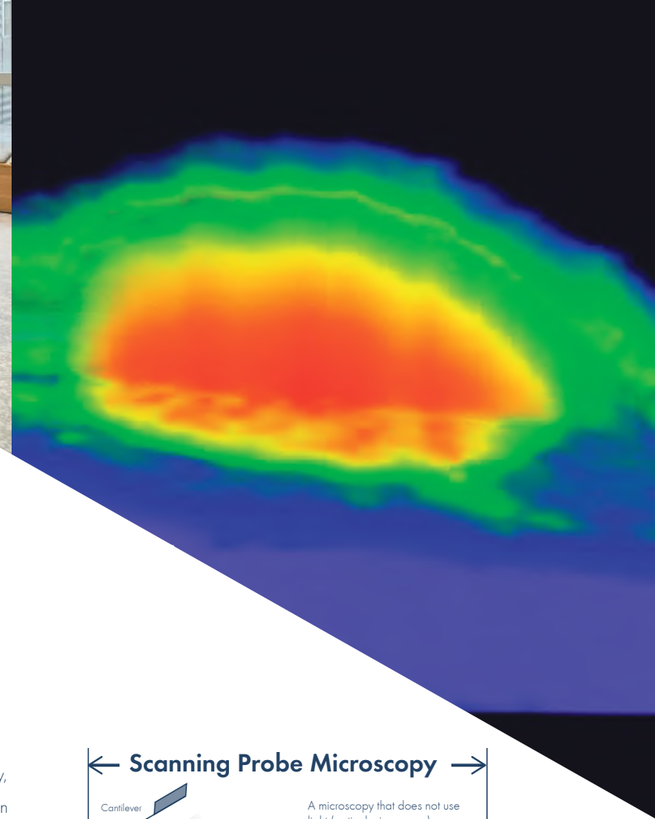
Collaboration with the Cancer Research Institute and the Institute of Science and Engineering is essential for research at NanoLSI. Therefore, we have connected each of these buildings by a corridor.

The NanoLSI, the Cancer Research Institute and the Institute of Science and Engineering are working closely together to promote complementary and interdisciplinary research.


Shared laboratories and research laboratories in large, partition-free spaces

Conference rooms for research meetings of various sizes and conducting methods


Lounge and socialising zones to encourage daily communication



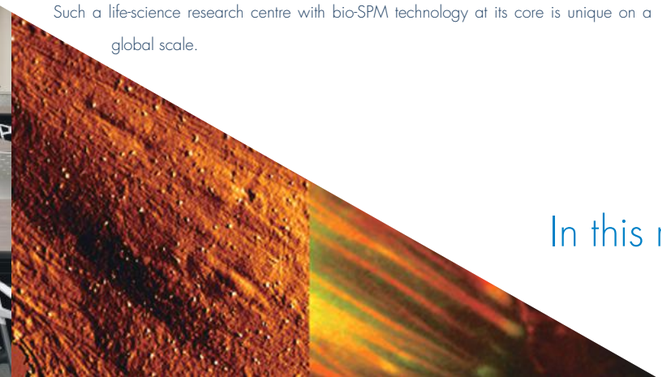
Discover cellular dynamics at the nanoscale

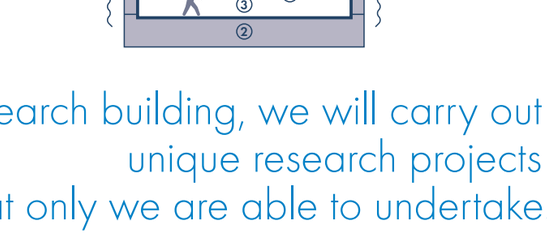
The core of NanoLSI's research is based on Scanning Probe Microscopy (SPM) technology, which is currently the only microscope capable of observing protein and cell dynamics in liquids at the nanoscale, that is, atomic and molecular size resolution without staining biological samples. Researchers at the NanoLSI independently developed this state-of-the-art technology.

SPM observation at the nanoscale is extremely sensitive to external influences such as vibrations and temperature, so great care must be taken in preparing the research environment. In addition, each instrument must be individually controlled and adjusted to suit the sample to be observed.

The NanoLSI Research Building provides an optimum research environment to meet these critical requirements. The entire building has been thoroughly vibration-isolated, and on the basement floor, which is vibration-resistant and has a stable environment with minimal temperature fluctuations, there are laboratories where a wide selection of SPMs can be individually installed and adjusted, ranging from the latest models currently under development to microscopes shared by the joint research programme. The centralised location of the SPMs, together with the electron microscopes (EM) in the same area, enables the observation of biological samples using a variety of approaches and leads to new and exciting discoveries.

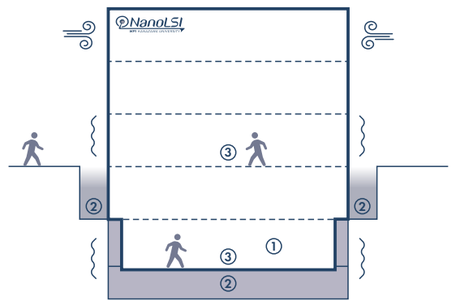
Such a life-science research centre with bio-SPM technology at its core is unique on a global scale.





Anti-vibration Measures

① Installation of basement levels reduces building vibrations
② Creation of dry areas isolates ground-borne vibrations
③ Construction of floating floors insulates various vibrations transmitted from within the building



In this research building, we will carry out unique research projects that only we are able to undertake.