NordicFiveTech Research Infrastructures 2019

Aalto CHALMERS DTU KTH NTNU

Cost center The facility is organized as an economic unit with total cost accounting
LIMS The facility has a laboratory information and management system (LIMS) for booking and invoicing
Capacity The facility has available capacity for external N5T researchers

This catalogue is a preliminary version by the N5T Task Force on Research Infrastructure and is based on information provided by the RIs themselves. If you have additional information or wish to make corrections, please do not hesitate to contact us. You will find our contact information on the N5T website.

Engineering Sciences

Civil engineering and Architecture

CHALMERS

HSB Living Lab

As well as providing residential accommodation, the building will serve as a laboratory for the researchers – a living laboratory. Measurements will be collected through sensors in the building, where water recycling, a solar panelling solution, smart booking systems, electricity consumption and sustainable building materials and components will be tested and evaluated.

Dept.: Architecture and Civil Engineering, ACE
Contact: Jesper Knutsson
Link: HLL

Cost center: ☒ LIMS: ☐ Capacity: ☒

KTH **Laboratory of Civil and Architectural Engineering**
Includes asphalt tomography, mechanical testing… Instruments can be found at link below; go to tools and chose rooms: No36 Clean room / Tomography OR N040 Mechanical testing MTS OR Lo40 Brinellvägen 23

Dept.: ABE School
Contact: Stefan Trillkott Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: Materiallab

Biological and chemical engineering

CHALMERS **Chalmers Mass Spectrometry Infrastructure, CMSI**
Mass spectrometry is an analytical technique that can be used to measure both the amount and structure of molecules. Mass spectrometry has many different applications, from analysing metals in food samples, confirming the structure of newly synthesised molecules, or measuring metabolites in blood. The CMSI is mainly focused on measuring small molecules (<1000 Da) in biological samples and measuring the molecular weight to identify synthesised chemicals.

Dept.: Biology and biological engineering, BIO Cost center: ☒ LIMS: ☐ Capacity: ☒
Contact: Otto Savolainen
Link: CMSI

DTU **DTU Metabolomics core**
Advanced mass spectrometry combined with chromatography is a core part of the lab. It has a long tradition of work on secondary metabolite profiling from micro-organisms especially fungi. A large collection of more than 1500 unique secondary metabolite and mycotoxin reference standards is to be found at this lab. Here cutting-edge dereplication for novelty evaluation of secondary metabolites in e.g. drug discovery applications is provided. It also includes a coupling with MS/HRMS libraries and stable isotope-labelling for precursor detection.
Instruments: An extensive collection of liquid and gas chromatography mass spectrometry instruments, LC- HRMS filtering analysis system and a mycotoxin MSMS library

Dept.: Department of Bioengineering
Contact: Ling Ding Cost center: ☐ LIMS: ☒ Capacity: ☒
Link: Metabolomics core

DTU **DTU Fermentation Core**

The mission of the research core is to offer advanced research facilities in terms of fermenters, off gas analysis, high throughput screening, and protein purification to researchers and students in order to support research activities at the university and continue to supply highly trained fermentation specialists for the growing biotech industry. Simultaneously we aim to provide visiting researchers and biotech companies with access to cutting edge facilities in order to foster international and industrial collaborations.
Instruments: The fermentation platform is distinguished by its combination of advanced fermentation, analytical and purification facilities as well as automatized cultivation equipment

Dept.: Department of Bioengineering
Contact: Tina Johansen — Cost center: ☐ LIMS: ☒ Capacity: ☒
Link: DTU Fermentation Core

DTU **DTU Proteomics Core**

DTU Proteomics Core provides instrument access and analytical services for state-of-the-art mass spectrometry equipment

Dept.: Department of Bioengineering
Contact: Erwin Schoof — Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: DTU Proteomics Core

DTU **Bio Facility (animals and fish)**

Bio Facility rummer en nutidig og højt specialiseret forskningsinfrastruktur til dyreforsøg. Den blå enhed er et af Europas mest avancerede anlæg til forsøg med fisk. Anlægget indeholder en række akvatiske faciliteter og rummer forskellige typer af 'våde' fiskestalde og særlige tilknyttede laboratorier. Derudover omfatter de 'tørre' dyreforsøgsfaciliteter en række almindelige dyrerum med mulighed for at opstalde mindre forsøgsdyr som rotter og mus blandt andet i individuelt ventilerede bure. I isolatorer kan forskerne håndtere kimfri mus (som er født uden bakterier i tarmen) eller arbejde med farlige stoffer. Desuden har centret rum til blandt andet adfærdstest og sektionsstuer

Dept.: Department of Food, Department of Aqua
Contact: Sanne Gram Nielsen — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link: Bio Facility

HPC and Computing

CHALMERS

SNIC/C3SE

C3SE provides researchers with hardware resources as well as software and knowledge of numerical modelling, simulation and analysis. The facility is one of the nodes of the Swedish supercomputer Swedish National Infrastructure for Computing, SNIC.

Dept.: Physics, F
Contact: Thomas Svedberg
Link: C3SE

Cost center: ☒ LIMS: ☐ Capacity: ☒

NTNU

HPC-Lab – Heterogenous and Parallel Computing Lab

2 IBM Power 9 AC922 noder med V100 GPUer

Dept.: Department of Computer Science
Contact: Anne Elster
Link:

Cost center: ☐ LIMS: ☐ Capacity: ☒

KTH

Parallelldatorcentrum (PDC)

High performance computing systems (CRAY XC40 + system using GPUs for pre- and postprocessing) and storage facilities, application experts and services for academic research and business R&D. Part of SNIC.se, part of NeiC and PRACE

Dept.: EECS School at central level
Contact: Erwin Laure
Link: PDC

Cost center: ☒ LIMS: ☒ Capacity: ☒

Aalto

Science-IT

Computation cluster "Triton" (~5000 cores, 88 GPU cards)

Dept.: SCI school
Contact: Specialist Mikko Hakala
Link: IT, SciComp

Cost center: ☐ LIMS: ☐ Capacity: ☐

DTU

Computerome

The Danish National Life Science Supercomputing Center, Computerome is an HPC Facility specialized for Life Science including clinical research. Users include Research groups from all Danish Universities and large international research consortiums as well as users from industry.

Computerome platform delivers fast, flexible and secure infrastructure as a service with the ability to process large amounts of sensitive data. Computerome is built using security by design principle and services are delivered by a strong team of specialists from DTU.

Instruments: Computerome uses secure private cloud technology as a delivery mechanism. Computerome's present compute resources consist of 49120 physical CPU cores with 343 Terabytes of memory, connected to 8 Petabytes of High-performance storage, The system is ranked number 470 in the list of world's fastest supercomputers (Top500.org)

Dept.: Department of IT
Contact: Steen Pedersen
Link: Computerome

Cost center: ☒ LIMS: ☒ Capacity: ☒

Electrical engineering, ICT

Aalto

Aalto Electronic-ICT

Research and education is carried out in the fields of electromagnetics and material studies, electronic circuit design and microelectronics, radio science and engineering, and space science and technology.

Dept.: ELEC school
Contact: Laboratory manager Matti Vaaja
Link: ICT, SpaceTech

Cost center: ☒ LIMS: ☒ Capacity: ☒

DTU

Acoustic Technology Facilities

The ultimate objective of the research at this lab is to develop improved technological solutions for communication within room acoustics, loudspeakers and hearing aids and noise control within transportation noise, vibration control, noise in buildings and the propagation of outdoor noise.
Instruments include two anechoic rooms, three reverberation rooms, scale model of a concert hall and a listening room.

Dept.: Department of Electrical Engineering
Contact: Andrew King
Link: Acoustic Technology Facilities

Cost center: ☐ LIMS: ☐ Capacity: ☒

Energy

CHALMERS

Chalmers Power central

Chalmers Power central is an advanced energy research facility based at the Johanneberg campus. Cutting edge research in combustion, gasification, gas cleaning, carbon capture, energy storage and material science is carried out here in a large-scale facility along with pilot scale units. The Power central also supplies the campus with electricity, heating, cooling and compressed air.

Dept.: Space, Earth and Environment, SEE
Contact: Otto Savolainen
Link: CMSI

Cost center: ☐ LIMS: ☐ Capacity: ☐

KTH

Sustainable Power Lab

Consists of 9 facilities, includes electric machines and drives lab, electric switching lab, EMC lab, flexible lab power supply platform, high voltage and insulation materials lab, photovoltaic power lab, power electronics lab, real-time simulation lab, educational power lab

Dept.: EECS School
Contact: Nicholas Honeth
Link: Power lab

Cost center: ☒ LIMS: ☒ Capacity: ☒

DTU

Poul la Cour Wind Tunnel

The Poul la Cour Tunnel is a wind tunnel of the closed-return type. It is one of the biggest university wind tunnels in the World with a fan driven by a 2.4 MW motor, giving a volume flow up to 630 cubic meter per second corresponding to a maximum test section velocity of about 105 m/s or 378 km/h. The maximum Reynolds number per meter is 7 million. Thus, for the standard two-dimensional wing sections with a chord length of 1.0 m the maximum Reynolds number will be 7 million. In special cases the chord length can be up to 2.0 m doubling the maximum Reynolds number to 14 million.

Dept.: Department of Wind Energy
Contact: Naja Møller
Link: Poul la Cour

Cost center: ☒ LIMS: ☒ Capacity: ☒

NTNU **National Smartgrid Laboratory**

The laboratory is a system-oriented laboratory providing state-of-the-art infrastructure for R&D, demonstration, verification, and testing over a wide range of Smart grid use cases. The laboratory enables us to test the Smart Grids of tomorrow.

Dept.: Department
Contact: halsten.aastebol@ntnu.no Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: https://www.ntnu.edu/smartgrid

NTNU **Electric Power Laboratories**

A wide variety of power engineering laboratories for high voltage, high current, electrical machines, power electronics and electrical installations. We have power supply up to 500 kV AC and DC, 1.2 MV impulse generator, short circuit test facility up to 150 kA, supply for stationary current up to 25 kA, test facilities for all kinds of electrical machines, power electronic components and converters and other electrical installations. All our laboratories have been upgraded and modernized in recent years.

Dept.: Department
Contact: halsten.aastebol@ntnu.no Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: https://www.ntnu.edu/iel/research/

Geoscience

NTNU **Reservoir laboratory and PoreLab**

State-of-the-art equipment for routine and special core analysis; micro-CT. PoreLab is a Norwegian Centre of Excellence.

Dept.: Department of Geoscience and Petroleum
Contact: Ole Torsæter Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: Reservoir lab

Marine technology

Aalto	**Aalto Ice Tank** 40x40 meter multipurpose basin ideally suited for testing ships and other maritime structures in ice conditions.
Dept.:	ENG school
Contact:	Laboratory manager Otto Puolakka, Professor Jukka Tuhkuri — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:	Ice Tank

NTNU	**Marine Cybernetics Laboratory** Slepetank/bølgebasseng med slepevogn med 6 DoF oscillator, bølgemaskin for langkammede bølger med høyde opp til 0,2 m, optisk posisjonsmålesystem (Qualisys)
Dept.:	Department of Marine Technology (IMT)
Contact:	Trygve Kristiansen — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:	Marine cybernetics lab

NTNU	**Marine Structures Laboratory** Servo-hydrauliske og elektriske rigger for testing av utmatning og brudd i marine konstruksjoner (Last: 3 kN – 4000 kN)
Dept.:	Department of Marine Technology (IMT)
Contact:	Svein Savik — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:	Marine structures lab

Mechanics

Aalto	**Industry and Innovation Infrastructure i3** Structural testing laboratory. Engineering geology research tunnel. Industrial Internet Campus. Environmental hydraulics laboratory. (List of facilities on separate page)
Dept.:	ENG school
Contact:	School of Engineering technology manager Panu Sainio — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:	

KTH **Odqvist Lab for Experimental Mechanics**

Includes f.ex. wind tunnels, anechoic, semi-anechoic and reverberant acoustic chambers, digital image correlation (DIC) systems. Consists of 4 facilities; fluid physics lab, lab for sound and vibration research, lightweight structures lab, solid mechanics lab

Dept.:
Contact: Stefan Hallström Cost center: ☐ LIMS: ☐ Capacity: ☒
Link:

DTU **CASMaT – Villum Centre for Advanced Structural and Material Testing**

CASMaT is the key research infrastructure at DTU servicing experimental research in mechanics of materials and structures. The Center is organized to align use of equipment and expertise at DTU across a range of application areas and length scales.
Large Scale Facility: The facility consists of a 1560 square metre test hall with three test stands capable of testing 45 m, 25 m and 15 m blades or other slender structures. Inside the test hall, a 460 square metre staff building is constructed. The staff building is two stories high and contains the control room, workshop, depots, visitor centre and various service facilities. The new test facilities are well suited for static and dynamic tests of wind turbine blades, while it will also be possible to test other large structures.
Structural Lab: The lab is outstandingly equipped with a large number (exceeding 50) of structural fatigue rated actuators (mostly from MTS) covering the testing range from 5kN to 5000kN, some of which are also well suited for large and full scale testing. These actuators, and the accompanying multi-axial and multi-station controllers, allow either a large number of simultaneous load axis (up to 40) to be used in one large test or up to 16 separate tests to be conducted simultaneously.
Material Testing – mechanical and Fiberlab: Mechanical testing - an accredited test laboratory for mechanical characterization of materials, in particularly composite materials, interfaces and joints. We measure stress-strain laws, cohesive laws, fatigue lifetime and damage tolerance.

Dept.: Department of Civil Engineering, Department of Mechanics and Department of Windenergy
Contact: Booking Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: CASMaT, Structural Lab, Material testing

NTNU **SIMLab – Structural Impact Laboratory**

SIMLab's extensive lab facilities include: pendulum impactor, shock tube, gas gun, split-Hopinson tension bar, split-Hopkinson pressure bar, drop-tower impact system, stretch-bending rig, self-piercing riveting machine, and digital image correlation system. In addition to the test facilities we have a wide range of high-speed and infrared cameras for data recording. For micro and nano scales testing SIMLab works closely with the Electron Microscopy lab at NTNU.

Dept.: Department of Structural Engineering
Contact: Magnus Langseth
Link: SIMLab; CASA

Cost center: ☒ LIMS: ☒ Capacity: ☒

Space and Aerospace

KTH **Swedish Aerospace Physiology Centre, SAPC**

Gondola centrifuge for human use, which at a peripheral speed of 117 km/h generates 15 G. Also used for development of G-protective equipment. Hypobaric chambers for simulating up to 20 000 masl, and for simulating diving to 150 m.

Dept.: CBH School
Contact: Ola Eiken
Link: SAPC

Cost center: ☐ LIMS: ☐ Capacity: ☒

Materials Science

Nanotechnology

DTU **DTU Nanolab – Cleanroom facilities for micro- and nanochip fabrication**

DTU Nanolab operates and maintains advanced processing equipment within 1350 m2, class 10-100, ISO 9001-certified, open access, pay-per-use cleanroom facilities. DTU Nanolab has built a versatile micro- and nanofabrication platform in order to shape a wide range of materials with structures down below 20 nanometers on substrates up to 8" in size. We provide a comprehensive and expanding selection of state-of-the-art process equipment for lithography, etching, thermal processing, thin film deposition, wafer cleaning, advanced packaging and characterization.

Dept.: DTU
Contact: Booking
Link: Nanolab

Cost center: ☒ LIMS: ☒ Capacity: ☒

Aalto

OtaNano Nanomicroscopy Center (NMC)

High-resolution electron microscopy, scanning probe microscopy, and X-ray scattering instruments for soft, hard, and biomaterial sample imaging and characterisation.

Dept.: Dept. of Applied Physics
Contact: NMC manager, professor Janne Ruokolainen Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: NMC

KTH

Electrum Lab (part of Myfab.se)

Cleanroom and laboratories for fabrication and characterization in the nano and micro scale, with wide variety of techniques. Full process lines for Silicon CMOS, MEMS and compound semiconductors, including GaAs, InP and SiC.

Dept.: EECS School at central level
Contact: Nils Nordell Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: Electrum

KTH

Albanova Nanofabrication Facility (part of Myfab.se)

Cleanroom and laboratories for basic research requiring nanofabrication and nanocharacterization with a wide variety of materials and substrate. Focus on direct writing. Nanometer scale patterning and metrology for a wide variety of materials and substrate sizes.

Dept.: SCI School, applied physics
Contact: David Haviland Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: Albanova

CHALMERS

Nanofabrication Laboratory, Myfab

The Nanofabrication Laboratory is part of the national research infrastructure Myfab and it is the national node for nanolithography, which is a method for producing patterns in the nanometer scale. Chalmers' expertise and extensive experience in nanolithography forms the basis for two strategic areas: microwave electronics and photonics, and quantum components. Here you have a complete laboratory fitted out to perform all the steps from material growth to components and circuits.

Dept.: Microtechnology and Nanoscience, MC2
Contact: Peter Modh Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: NFL

NTNU

NanoLab

700 m^2 clean-room, providing general purpose equipment for the fabrication and characterisation of complex systems on the micro- and nanoscale. The clean room is an open-access user-operated facility, managed by a staff of nine full time engineers. International researchers may also use the facility. The lab offers a wide range of thin-film deposition methods (evaporation, sputtering, chemical vapour deposition and atomic layer deposition), covering metals, insulators, semiconductors and piezo-electrics. It also offers a broad range of etching methods, including wet and dry etching chemical techniques and ion-milling. NanoLab provides extensive optical and e-beam lithographic equipment, enabling patterning of features down to 1 µm and 6 nm, respectively. Two maskless aligners are available within the lab for rapid optical lithography. "Bottom-up" preparation of nanomaterials is catered for in a chemical clean-room equipped with fumehoods, laminar flow benches, a nitrogen glovebox, ovens, autoclaves, dip-coaters and a Langmuir Blodgett trough.
A wide range of characterisation equipment is available, including a scanning electrochemical microscope, a particle size analyser, absorption spectrometer, Atomic Force Microscopes (AFMs), a 3D profilometer, a contact angle measurement system, and three SEMs. Compositional analysis may be carried out using X-ray photoelectron spectroscopy (XPS), Auger electron spectroscopy (AES) or µ-Raman spectroscopy. Focused ion beam (FIB) enables deposition, sputtering, serial tomography, TEM preparation and subsurface investigations.

Dept.: Faculty of Natural Sciences
Contact: Dr. Peter Köllensperger
Link: NTNU NanoLab

Cost center: ☒ LIMS: ☒ Capacity: ☒

Physics and Chemistry

CHALMERS

Chalmers Materials Analysis Laboratory, CMAL

The laboratory has world class equipment for structural characterization. There is, for example, a combination of world class electron microscopes including state-of-the-art high-resolution electron microscopes for quantitative imaging, diffraction and spectroscopy and where we also can perform in-situ studies. Moreover, the lab features a state-of-the-art SAXS instrument, a Raman- and an FTIR microscope and spectrometer, as well as a confocal scanning laser microscope. We also have equipment for optical spectroscopy, surface analysis and chemical characterization, as well as equipment for sample preparation.

Dept.: Physics, F
Contact: Peter Modh
Link: CMAL

Cost center: ☒ LIMS: ☐ Capacity: ☒

Aalto	**Raw Materials Research Infrastructure** RawMatters covers the research facilities that operate in the field of inorganic materials (metals, oxides etc.). This means focus on metals and ceramics at bulk or nano-level, in solid or aqueous environments.
Dept.:	CHEM school
Contact:	Technical service manager Jaana Rich — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:	Raw Materials RI

CHALMERS	**Chemical Imaging Infrastructure (CII)** The Chemical Imaging Infrastructure (CII) is a world-unique research infrastructure with a primary focus on high lateral resolution imaging mass spectrometry. The infrastructure offers a wide range of tools for analytical questions within materials science, geoscience and life science. The multimodal imaging capabilities makes CII unique in that we have tools and competence for both MALDI and dynamic as well as static SIMS imaging.
Dept.:	Chemistry and chemical engineering, K
Contact:	Per Malmberg — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:	CII

KTH	**2MILab, Molecules and Materials at Interfaces Lab** Lab for chemical, electrochemical and physical analysis of surfaces, interfaces and dispersed systems. Techniques include adsorbed layer characterization, atomic force microscopy, surface tension/contact angle, porosimetry/surface area.
Dept.:	CBH School
Contact:	Matthew Fielden — Cost center: ☐ LIMS: ☒ Capacity: ☒
Link:	2MILab

NTNU **KinCat Laboratories**

The laboratory is equipped with a wide range of standard, specialized and advanced equipment for synthesis, characterization and testing of catalyst materials and for surface science investigations

Dept.: Department of Chemical Engineering
Contact: Edd. A. Blekkan, Estelle M. VanHaecke — Cost center: ☒ LIMS: ☐ Capacity: ☐
Link: KinCat

Aalto **BioEconomy**

Selected research facilities for development of chemicals, fuels, and other materials from renewable biomass utilizing biotechnical, chemical, thermal and catalytic processing technologies. Various refining processes are also used to develop biopolymers and fibre and composite products. The infrastructure contains research laboratories, characterization and analysis equipment and modeling and simulation tools in the field of biorefinery.

Dept.: CHEM school
Contact: Technical service manager Jaana Rich — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link: BioEconomy RI

NTNU **Biopolymers/Bionano**

Preparatory lab, including infrastructure such as high temperature oven, critical point dryer for small samples, 3D printers, atomic force microscopes, TIRF, microfluidic set-up, fibre interferometric set-up, rheology

Dept.: Dept. of Physics
Contact: Pawel Sikorski, Bjørn T. Stokke, Gjertrud Maurstad — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:

NTNU **Centre for Molecular Imaging (MINT)**

Confocal microscopes (CLSM), Atomic force microscopes (AFM), Total internal reflection microscope Zeiss Laser (TIRF), Flow cytometry

Dept.: Dept. of Physics
Contact: Catharina Davies, Astrid Bjørkøy — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link: MINT

KTH **Laser Lab**

Time-resolved angle-resolved photoelectron spectroscopy, ultrafast electron microscopy, time and spatially-resolved photoluminescence, THz time-domain spectroscopy

Dept.: SCI School, applyed physics
Contact: Valdas Pasiskevicius — Cost center: ☐ LIMS: ☐ Capacity: ☐
Link: Laser lab

KTH **Advanced Instrumentation Lab**

Optical and electron microscopy, X-ray diffractometry, Scanning probe microscopy, Thermal analysis with STA (DSC, DTA, TGA), MS, Dilatometry, Hardness measurements, Magnetic measurements, Sample preparation tools for SEM and TEM

Dept.: ITM School, material science & engineering
Contact: Peter Hedström — Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: AIL

NTNU **Photo emission lab**

Surface science laboratory: XPS, UPS, TPD, LEED

Dept.: Dept. of Physics
Contact: Steinar Raaen — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:

NTNU **RECX (Resource centre for X-ray)**

State of the art diffraction facilities for the analysis of powders and solid compacts. The in-house X-ray laboratories comprise diffraction, small-angle X-ray scattering (SAXS), radiography and tomography setups that are part of Norwegian Centre for X-ray diffraction, scattering and imaging (RECX). RECX is funded by The Research Council of Norway.

Dept.: Dept. of Physics; Dept. of Materials Science and Engineering
Contact: Dag Breiby, Ragnvald Mathiesen, Ole Buset; Tor Grande, Kristin H. Wells — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link: RECX; Powder Diffraction Lab

NTNU **NORTEM**

Transmission electron microscopes JEM-2100 (LaB6), JEM-2100F and a double corrected JEM-ARM200F. Sample prep lab, computing

Dept.: Dept. of Physics
Contact: Randi Holmestad — Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: NORTEM

NTNU **Electron Microscopy Lab**

Sem A (JSM 840), Hitachi SU6600 FEG SEM, LV-SEM (Hitachi S-3400N), LV-Fe-SEM (Zeiss Supra 55 VP), Fe-SEM (Zeiss Ultra 55 LE), EPMA (Jxa-8500F), EDS, EDAX Gernesis, Tem (JEOL, JEM-2010, Fishione Plasma Cleaner, EM sample cleaning, Agar Turbo Carbon Coater, SEM sample coating, Fischione Ion Mill, TEM sample preparation

Dept.: Dept. of Materials Science and Engineering
Contact: Yanyun Li, Ida Westermann, Jarle Hjelen, Yingda Yu — Cost center: ☒ LIMS: ☐ Capacity: ☒
Link: EM Lab

DTU **Collection of Electron Microscopes and labs (at DTU Nanolab)**

DTU Nanolab has a suite of seven complementary electron microscopes. Four scanning electron microscopes (SEM), two of which are dual beam (SEM combined with a focused ion beam, FIB), and three transmission electron microscopes (TEM).
Three state-of-the-art distinct preparation labs allows the treatment of hard and soft matter samples prior microscope analysis. In addition, there are a number of computers available for off-line image and spectral data analysis, image simulation, and image reconstruction.

Dept.: DTU Nanolab
Contact: Booking — Cost center: ☒ LIMS: ☒ Capacity: ☐
Link: EM

KTH **Infrastructure for R&D of Fusion Reactors at KTH Alfven Laboratory**

Fusion plasma device EXTRAP T2R. Research on magnetic confinement fusion, including a state-of-the-art plasma instability control system, utilizing arrays of active magnetic field coils. device produces a hot and dense plasma that can be utilized also for basic plasma science, research on space plasmas, investigation of technical plasma applications, or plasma based material research. The device has excellent capabilities for material studies, which are not yet fully utilized.

Dept.: EECS School, fusion plasma physics
Contact: Per Brunsell Cost center: ☐ LIMS: ☐ Capacity: ☒
Link: EXTRAP

NTNU **Spark plasma sintering lab**

Rapid densification of materials by applying pressure and high current (SPS 825 Fuji Electronics)

Dept.: Dept. of Materials Science and Engineering
Contact: Mari Ann Einarsrud, Kjell Wiik, Eli Beate Larsen Cost center: ☒ LIMS: ☐ Capacity: ☒
Link:

NTNU **Laboratory for Soft and Complex Matter Studies**

Thermal Gravimetry Analysis. Differential scanning calorimetry. Rheometry including electrorheometry, magnetorheotheometry, high-pressure rheometry and in-situ small angle light scattering rheometry; Atomic Force Microscopy, Optical microscopy, Photoemission (XPS, UPS), Energy diffraction (LEED), Photoemission microscopy (PEEM), Thermal desorption (TPD). Scattering and diffraction: X-ray scattering: 2D WAXS and SAXS, Light scattering, Birefringence. Equipment for rapid design of customized table-top physics experiments.

Dept.: Dept. of Physics
Contact: Jon Fossum, Ole Buset Cost center: ☒ LIMS: ☐ Capacity: ☒
Link: Soft-Complex lab

DTU **3DImaging center (3DIM)**

The 3D imaging center, 3DIM, at DTU is an x-ray user facility and a competence center for x-ray and neutron imaging. The facility has five x-ray scanners that can provide 3D visualization of hard and soft materials and biotechnological products. CT scanning with absorption or phase contrast is provided with a spatial resolution varying from 100 nm on 100 μm thick samples to 100 μm on 20 cm thick samples. State-of-the-art laser vision equipment is available for high resolution surface scanning. 3DIM is currently placed in interim locations in building 309, but will move into a new 950 m2 center in building 310 ultimo 2019 – the largest of its kind in Northern Europe. It is the ambition of 3DIM to formally become a national infrastructure.
The 3DIM center is also the hub that connects Denmark and DTU to its external facilities and collaborations at the European Spallation Source (ESS): DANMAX and MAX IV notably.

Dept.: Department of Physics
Contact: Carsten Gundlach — Cost center: ☐ LIMS: ☐ Capacity: ☒
Link: 3DIM

DTU **Pilot Plant**

At this lab the focus on unit operations, reaction engineering, process control, process and plant design, instrumentation, automation and industrial measuring technology, but also topics such as scale-up and scale-down and batch versus continuous processes. Special focus areas are fermentation mainly from a process point-of-view, but also innovative technology and particle technology.
Instruments for distillation, absorption, drying, filtration, extraction, centrifugation, fermentation etc.

Dept.: Department of Chemical Engineering
Contact: Steen Larsen; Ivan Hundebøl — Cost center: ☐ LIMS: ☐ Capacity: ☒
Link: Pilot Plant

Biotechnology

NTNU **NMR LAB / Norwegian NMR Platform (NNP) - Trondheim**

400 MHz with SmartProbe, 600 and 800 MHz both with Cryoprobe TCI – all are setup for automation.

Dept.: Department of Biotechnology and Food Science
Contact: Finn L. Aachmann, Torun M. Melø — Cost center: ☒ LIMS: ☒ Capacity: ☒
Link: NMR Lab

DTU **NMR Spectroscopy Center**

Nuclear Magnetic Resonance (NMR) spectroscopy is a highly versatile and information-rich technique for the identification, quantification and functional characterization of chemical or biological compounds. Areas of applications include any field where molecular information is beneficial, for instance drug discovery, bio- and chemocatalysis, metabolomics, material science, food quality as well R&D and Q&A in chemistry and the pharmaceutical industry.

Dept.: Department of Chemistry
Contact: NMR
Link: NMR Center

Cost center: ☐ LIMS: ☐ Capacity: ☒

[Template]

Institution	**RI name** Description
Dept.:	Department
Contact:	
Link:	

Cost center: ☐ LIMS: ☐ Capacity: ☐