HORIZON EUROPE CALLS 2023/2024

CLUSTER 4 DIGITAL, INDUSTRY AND SPACE

NTNU DIGITAL IN EUROPE: LIST OF CALLS WITH THEIR RESPECTIVE INTERESTED NTNU RESEARCHERS

Proposed by: NTNU Brussels office, NTNU digital & IE Faculty
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Dear Reader,

Are you looking for the best researchers with whom to collaborate on Horizon Europe cluster 4 calls? Then please, read on.

At NTNU, the Norwegian University of Science and Technology, we have matched our researchers to the upcoming Horizon Europe 2023/2024 calls, based on both their expertise and the industry relations they can bring to the table.

As the largest university in Norway, we can be a powerful partner and collaborator. With more than 85 funded projects, of which 53 are already signed (accounting for more than € 32 million in funding) at the time of writing, we are setting even more ambitious targets for Horizon Europe 2023/2024 and going forward.

This document is one of six prospectuses that outline areas of expertise for - and of interest to - NTNU researchers, for each of the upcoming six clusters of Horizon Europe.

They are living documents. Even if you do not find an exact match, our research community would be thrilled to open a collaborative dialogue with you. Just ping a message to one of our institutional contact points, like NTNU’s Brussels Office.

Together, we can create true “knowledge for a better world”

Tor Grande
Pro-rector of Research
Knowledge provides people with opportunities and influence, as well as a foundation for making wise choices. Knowledge inspires and challenges. It changes attitudes, mindsets, and how we perceive the world around us. Informed debate strengthens our democracy. NTNU's activities should benefit society as a whole and society can trust that our findings comply with best scientific practice.

Knowledge and technology development create opportunities for increasing sustainable value creation and finding answers to major challenges. Through the United Nations, the world has agreed on 17 Sustainable Development Goals. NTNU will contribute actively towards achieving the Sustainable Development Goals.

NTNU's strength is our competence in science and technology combined with academic breadth and interdisciplinarity.
NTNU is a university with an international focus, with headquarters in Trondheim and campuses in Ålesund and Gjøvik. NTNU has a main profile in science and technology, a variety of programmes of professional study, and great academic breadth, including medicine, architecture, and entrepreneurship.

**KEY NUMBERS FOR 2022**

- **NOK 10 billion** annual budget
- **44 170** students
- **7761** FTE
- **412** doctoral degrees

NTNU offers 397 programmes of study (2022), as well as continuing and further education. The university has the main responsibility for higher education in technology in Norway, and largest in engineering, teacher education and architecture. NTNU aims to be a national hub in programmes of professional study.

NTNU is the institution awarded the most funding from the Research Council in Norway, as well as being granted with 255 signed projects and a total funding of more than €141 million from Horizon 2020. Moreover, NTNU is a host or partner for 46 major research centers (SFF, SFI, and FME), and has internal initiatives to develop and recruit top researchers.

In Horizon Europe (HEU) - as of March 2023 - NTNU has 97 funded projects, of which 77 are already signed (accounting for more than € 46 million in funding), positioning NTNU among the top HEU Norwegian actors, and among the top 10 actors within the European Higher Education Sector in HEU.

Beyond its science and technology profile, NTNU covers a broad range of social science and humanities (SSH) disciplines including sociology, political science, education, psychology, economics, history, cultural sciences and the arts. Researchers from SSH disciplines have successfully addressed societal issues and contributed to social innovation through involvement in more than 30 HEU projects so far, presenting NTNU as promising and strong partner in future European collaborations in all Global Challenge clusters under Horizon Europe.

From 2014-2023, NTNU has identified several strategic research areas and enabling technologies:
The NTNU Brussels Office represents NTNU in Brussels, provides strategic advice on European policies, promotes NTNU positions, manages or participates in strategic networks and initiatives in Brussels, and provides professional services to the NTNU community based on its Brussels presence.

The office represents both «the door to NTNU» for organizations that want to collaborate and create synergies with NTNU, and «the door to Europe» for colleagues active in or willing to enter the European Arena.

NTNU opened the doors of its Brussels Office in 2015 and today the staff consists of four people, Director Massimo Busuoli, one Senior Adviser and two trainees.

The office activities and services include the following:

- Promotion and representation of NTNU in Brussels
- Positioning of NTNU in relevant Brussels-based initiatives and bodies
- Contribution to improve NTNU’s EU project portfolio
- Provide internship opportunities for NTNU employees and students
- Provision of logistic support and services in Brussels
NTNU Digital

NTNU Digital is a strategic initiative created to increase the understanding, use and development of digital technology to solve complex issues across research disciplines. The focus areas of NTNU Digital are Artificial Intelligence, Autonomous Systems, Cyber Security and Computational Technology. The core research areas can be shared across diverse applications, and the ambition is to achieve a beneficial cross-fertilization by bringing together researchers from different application areas but with commonalities in method and theory.

NTNU Digital provides the following resources across all the faculties at NTNU:

- Long-term positioning and participation in European Networks and Alliances
- Coordination, guidance and review of large, strategically important applications submitted for the European Framework Programmes and the national funding schemes
- Identification of new collaboration opportunities and overview of ongoing, relevant projects
- Internal platform to meet, obtain and share info across NTNU related to enabling digital technologies
- Promotion of NTNU research excellence and capacities within digital technologies in front of local, national, and international research and innovation arenas
NTNU Digital: Success stories

These are some examples of NTNU Digital success stories.

Conceptual architecture and coordination of the MSCA COFUND PERSEUS proposal which aims to educate top-level researchers contributing to solve societal challenges within the areas of energy, healthcare, manufacturing, mobility, and ocean-based technology, through the use of digital technologies.

Strategic guidance and review of long-term strategic and prestigious research and innovation proposals submitted for the funding to the Research Council of Norway. These projects have been awarded: SFI Autoship - Autonomous ships for safe and sustainable operations, NorwAI - Norwegian Research Centre for AI Innovation, NORCICS - Norwegian Centre for Cybersecurity in Critical Sectors and CGF - Centre for Geophysical Forecasting.
The Faculty of Information Technology and Electrical Engineering (IE) has more than 65 percent of the Norwegian university education and research within our disciplines. We offer bachelor, master, and PhD degrees in our areas of expertise. We have the largest number of students at Master and PhD levels in Norway within our disciplines.

The research at the Faculty of Information Technology and Electrical Engineering addresses challenges ranging from basic research in mathematics, computer science, cybernetics, nano and microelectronics, to global research demands within energy, transport, health and welfare, robust and secure ICT services, cyber security and marine and arctic operations.

The different research fields are organized along the lines of 11 strategic research areas:

- Artificial Intelligence
- Autonomous Systems
- Cyber Security
- Small Satellite Lab
- Mathematics in Technology
- Data Science
- Internet of Things
- Energy Efficient Computing Systems
- Digital Twins
- Digital Enterprise
- Digital Electric Energy
Horizon 2020

IE Faculty participation

65

RESEARCH PROJECTS

Ranging from excellence projects within basic research (ERC), doctoral and postdoctoral training (MSCA) to collaborative R&I projects with higher TRL levels together with a number of European partners within research, public sector and industry.
Faculty of Information Technology and Electrical Engineering

We have great influence on and responsibility for new information-based industrial developments and developments within other areas of society which apply information and communication technology. Both our research and education are at a high international level.

Our PhD programs are popular for national and international students, either at a program within our faculty:

- Computer Science
- Electric Power Engineering
- Electronics and Telecommunication
- Engineering Cybernetics
- Information Security and Communication Technology
- Mathematical Sciences

Or through a cross-disciplinary program such as Medical Technology

We are also partners in two National research schools:

- Nanotechnology for Microsystems
- Computer and Information Security
As the largest Norwegian university with high multidisciplinary nature, NTNU offers a wide range of expertise and competences. Specific mapping of available researchers willing to collaborate on Horizon Europe have been performed for all clusters, producing documents similar to this brochure. All the brochures are available through the NTNU Brussels Office.

Make sure you have the latest version available by downloading it from this website.

Should you be interested to explore collaboration opportunities in areas not present in any of these brochures, you can get in touch with the institutional entry points of the university

**ENTRY POINTS**

**NTNU Brussels Office**

**NTNU Digital**
Contact person: John Krogstie

**Faculty EU advisors**
AD - Faculty of Architecture and Design
  Tone Woie Alstadheim and Srutarshi Pradhan
HF - Faculty of Humanities
  Chamila Thushari Attanapola
IE - Faculty of Information Technology and Electrical Engineering
  Nathalie Søyseth and Filip Jessen
IV - Faculty of Engineering
  Ingunn Syrstad Bøgeberg and Miriam K. Khider
MH - Faculty of Medicine and Health Sciences
  Emma Louise Walton
NV - Faculty of Natural Sciences
  Thais Mothe-Diniz and Eugen Gravningen Sørmo
SU - Faculty of Social and Educational Sciences
  Bård Li and Jens Rohloff
ØK - Faculty of Economics and Management
  Thomas Aarnseth
VM - NTNU University Museum – Astrid Johansen
NTNU in Gjøvik – Anne Hilde Ruen Nymoen
NTNU in Ålesund – Kirsti Brekke
RESEARCHERS

Destination 1: Climate neutral, circular and digitised production

Here you can find potential NTNU researchers that are interested in collaborations on destination 1.

The following pages are sorted into the calls for the destination presented in the work programme for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.
Call - TWIN GREEN AND DIGITAL TRANSITION 2023 TWO STAGE.

A New Way to Build, accelerating disruptive change in construction.

HORIZON-CL4-2023-TWIN-TRANSITION-01-11: Intelligent data acquisition and analysis of materials and products in existing built works (RIA)

Call - TWIN GREEN AND DIGITAL TRANSITION 2024.

Manufacturing Industry.

HORIZON-CL4-2024-TWIN-TRANSITION-01-03: Manufacturing as a Service: Technologies for customised, flexible, and decentralised production on demand (Made in Europe Partnership) (RIA)

HORIZON-CL4-2024-TWIN-TRANSITION-01-05: Technologies/solutions to support circularity for manufacturing (Made in Europe Partnership) (RIA)


HORIZON-CL4-2024-TWIN-TRANSITION-01-32: Optimisation of thermal energy flows in the process industry (Processes4Planet partnership) (IA)

HORIZON-CL4-2024-TWIN-TRANSITION-01-34: Renewable hydrogen used as feedstock in innovative production routes (Processes4Planet Partnership) (RIA)

HORIZON-CL4-2024-TWIN-TRANSITION-01-35: Turning CO2 emissions from the process industry to feedstock (Processes4Planet partnership) (IA)


HORIZON-CL4-2024-TWIN-TRANSITION-01-44: Digital transformation and ensuring a better use of industrial data, which can optimise steel supply chains (Clean Steel Partnership). (IA).


Call - TWIN GREEN AND DIGITAL TRANSITION 2024 TWO STAGE

Manufacturing Industry.


A New Way to Build, accelerating disruptive change in construction.

Nuria Espallargas
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Expertise
Surface chemistry and engineering, tribology and tribocorrosion, lubricants, including environmentally acceptable, nano-tribology.

Performs basic research on degradation phenomena of surfaces exposed to aggressive chemical environment.

Research focused on understanding the chemo-mechanical degradation phenomena starting on surfaces. This knowledge enables finding solutions to make more durable and performing materials, to contribute to a greener world.

Also perform research on developing new lubricant formulations for the green shift. Controlling surface chemistry is the ultimate goal of my research.

Relevant projects
Main topics of research projects:
- Tribocorrosion mechanisms - coatings and metals.
- Multidegradation - the interaction of tribocorrosion with fatigue.
- Experimental nano-tribology.
- Environmentally acceptable lubricants and water lubrication.
- Coatings and surface treatments for tribological contacts.
- Synthesis and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.

Contact information
nuria.espallargas@ntnu.no
+4746917452

Relevant links outside academia
Industrial contacts in different sectors both in Norway and in Europe

Fabio Sgarbossa
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Contact information
fabio.sgarbossa@ntnu.no
+4790768098
Eilif Hjelseth
Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information
eilif.hjelseth@ntnu.no
+4795266100

Expertise
- Digitalization of construction processes
- Building Information Modelling (BIM)
- Virtual Design and Construction (VDC)
- Development of knowledge-based expert systems
- Transformation of codes and regulations into automatic/semiautomatic validations
- Digitalization of sustainability requirements
- Change management
- Digital solutions for Project management
- Information Managements
- Standardization

Relevant projects
DigiPlace - Development of a framework for a digital European platform
Growing Circle - digital solution for increased circularity, digital passport and digital twins
Bridging the Gap - Holistic requirement for the entire lifecycle
Standardization at international (ISO), European (CEN) and national (NS) levels

Relevant links outside academia
Board member of BuildingSMART Norway
Head of the digitalization group at Prosjekt Norge

Erlend Alfnes
Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
erlend.alfnes@ntnu.no
+4709291145

Expertise
- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects
European projects:
- Lean 4.0: Lean European Action-learning Network utilizing Industry 4.0
- EuroLean+: European Lean Enterprise Alliance
National projects:
- Respons: Smart planning in supply chains for manufacturing of advanced ship equipment
- Soundchain: Effective supply chains for manufacturing of underwater sensor systems
Bjørn Andersen
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
bjorn.andersen@ntnu.no
+4792602882

Relevant links outside academia
Large network through prosjektnorge.no, industry, public sector, etc.

Expertise
Project management, process modelling, performance measurement, stakeholder management

Expertise specific to this call:
Process modelling, metrics

Relevant projects
PRIME
TARGET

Nuria Espallargas
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
nuria.espallargas@ntnu.no
+4746917452

Relevant links outside academia
Industrial contacts in different sectors both in Norway and in Europe

Expertise
Surface chemistry and engineering, tribology and tribocorrosion, lubricants, including environmentally acceptable, nano-tribology.

Performs basic research on degradation phenomena of surfaces exposed to aggressive chemical environment.

Research focused on understanding the chemo-mechanical degradation phenomena starting on surfaces. This knowledge enables finding solutions to make more durable and performing materials, to contribute to a greener world.

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Relevant projects
Main topics of research projects:

- Tribocorrosion mechanisms - coatings and metals.
- Multidegradation - the interaction of tribocorrosion with fatigue.
- Experimental nano-tribology.
- Environmentally acceptable lubricants and water lubrication.
- Coatings and surface treatments for tribological contacts.
- Synthesis and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.
Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
fabio.sgarbossa@ntnu.no
+4790768098

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information
eilif.hjelseth@ntnu.no
+4795266100

Relevant links
outside academia
Board member of BuildingSMART Norway
Head of the digitalization group at Prosjekt Norge

Expertise
• Digitalization of construction processes
• Building Information Modelling (BIM)
• Virtual Design and Construction (VDC)
• Development of knowledge-based expert systems
• Transformation of codes and regulations into automatic/semiautomatic validations
• Digitalization of sustainability requirements
• Change management
• Digital solutions for Project management
• Information Managements
• Standardization

Relevant projects
DigiPlace - Development of a framework for a digital European platform
Growing Circle - digital solution for increased circularity, digital passport and digital twins
Bridging the Gap - Holistic requirement for the entire lifecycle
Standardization at international (ISO), European (CEN) and national (NS) levels
Elli Verhulst

Department of Industrial Economics and Technology Management
Faculty of Economics and Management

Contact information
elli.verhulst@ntnu.no
+47 73590164

Expertise
sustainable innovation and entrepreneurship, interdisciplinary collaboration, human factors sustainable/circular business models, integration processes, method and tool development

Relevant projects
- Integration of sustainability in innovation processes at SMEs - different projects
- Tools and method development for sustainable innovation and entrepreneurship - different projects
- Digifab, supporting SMEs to move towards Industry 4.0 (NFR funding)
- Prisms Practical and Innovative Solutions for Manufacturing Sustainability (University of Cambridge, IfM ECS)

Relevant links
outside academia
Industry, cluster organizations, entrepreneurs and public sector.

Kjersti Kjos Longva

Department of International Business
Faculty of Economics and Management

Contact information
kjersti.kjos.longva@ntnu.no
+47 70 16 12 94

Expertise
Entrepreneurship, SMEs, entrepreneurship education, innovation in education, management education, innovation skills, innovation processes, university-industry collaboration, sustainable business models.

Relevant projects
- **ERASMUS+** project BLUEWBC Sustainable development of BLUE Economics through higher education and innovation in Western Balkan Countries.
- nnoPraksis - Innovative internships in business education.
- TEFT-lab at NTNU.
Erlend Alfnes

Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
erlend.alfnes@ntnu.no
+4709291145

Expertise
- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects
European projects:
- Lean 4.0: Lean European Action-learning Network utilizing Industry 4.0
- EuroLean+: European Lean Enterprise Alliance

National projects:
- Respons: Smart planning in supply chains for manufacturing of advanced ship equipment
- Soundchain: Effective supply chains for manufacturing of underwater sensor systems
Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information
morten.hovd@itk.ntnu.no
+47 91897189

Expertise
Control engineering applied to the smart grid and/or chemical process industries

Relevant projects
MSCA ITN TEMPO
National Norwegian research projects

Relevant links
outside academia
Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)
Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
fabio.sgarbossa@ntnu.no
+4790768098

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects: Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Arvind Sharma

Department of Information Security and Communication Technology
Faculty of Information Technology and Electrical Engineering

Contact information
arvind.sharma@ntnu.no
+47 46710948

Relevant links
outside academia
Security Industries and research institutions

Expertise

Expertise specific to this call:
Technology assessment, testing, product development, techno-economic study

Relevant projects
Norwegian centre of Cyber Security for Critical infrastructure (NORCICS)
Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information
mørten.hovd@ltk.ntnu.no
+47 91897189

Expertise
Control engineering applied to the smart grid and/or chemical process industries

Relevant projects
MSCA ITN TEMPO
National Norwegian research projects

Relevant links outside academia
Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)
Bjørn Andersen
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
bjørn.andersen@ntnu.no
+4792602882

Relevant links outside academia
Large network through prosjektnorge.no, industry, public sector, etc.

Expertise
Project management, process modelling, performance measurement, stakeholder management

Expertise specific to this call:
Participant in pilot project to map building for demolition for reuse

Relevant projects
PRIME
TARGET

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Govert Valkenburg
Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information
govert.valkenburg@ntnu.no
+47 94896748

Expertise
Interpretive social-scientific expertise. Social scientist with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects
My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),
MILESECURE2050 (low-carbon transitions and energy security).
Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information
morten.hovd@itk.ntnu.no
+47 91897189

Expertise
Control engineering applied to the smart grid and/or chemical process industries

Relevant projects
MSCA ITN TEMPO
National Norwegian research projects

Relevant links
outside academia
Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)
Fabio Sgarbossa
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects: Lean 4.0; H2GLASS; MAIA; DE2HUMAN
National projects: Digimat; DigCBA; SmartLIB; FutureLOG

Leonardo Montecchi
Department of Computer Science
Faculty of Engineering

Expertise
Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects
ADVANCE (MSCA-RISE-2018-823788), CONCERTO (ARTEMIS-2012-1-333053), CHESS (ARTEMIS-2008-1-100022)

Contact information
fabio.sgarbossa@ntnu.no
+4790768098

Contact information
leonardo.montecchi@ntnu.no
+47 4628 6498

Relevant links outside academia
ResiTech s.r.l. (Italy):
Instituto Nacional de Pesquisas Espaciais, Brazil (National Space Research Institute of Brazil)
Arvind Sharma
Department of Information Security and Communication Technology
Faculty of Information Technology and Electrical Engineering

Contact information
arvind.sharma@ntnu.no
+47 46710948

Relevant links outside academia
Security Industries and research institutions

Expertise

Expertise specific to this call:
Technology assessment, testing, product development, techno-economic study

Relevant projects
Norwegian centre of Cyber Security for Critical infrastructure (NORCICS)
Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
fabio.sgarbossa@ntnu.no
+47 91897189

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information
morten.hovd@itk.ntnu.no
+47 91897189

Expertise
Control engineering applied to the smart grid and/or chemical process industries

Relevant projects
MSCA ITN TEMPO

National Norwegian research projects

Relevant links
outside academia
Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)
Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
fabio.sgarbossa@ntnu.no
+4790768098

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Ilangko Balasingham

Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Contact information
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+ 4793459022

Expertise
- Microscale antennas and wireless communication systems
- Passive (battery-free) wireless communication methods
- Passive microimplants for actuation, sensing and communication
- Medical signal and image processing using machine learning algorithms
- Molecular communication technology (nanoscale communication modeling and data inference

Relevant projects


3. Principle Investigator of 5G HEalth AquacultuRe and Transport validation trials (5G-HEART), (Funded by the EC H2020:ICT, 01.07.2019-30.06.2022, award EUR 14.3 million)


6. Work Package Leader of ULTRASPONDER, (Funded by the European Union 7th Framework Program, STREP, 01.09.2008 -31.08.2011, award EUR 4.5 million)
Andreas Erbe
Department of Materials Science and Engineering
Faculty of Natural Science

Contact information
andreas.erbe@ntnu.no
+47 73594048

Expertise
- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects
Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN

Relevant links
outside academia
Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).
**Nuria Espallargas**  
Department of Mechanical and Industrial Engineering  
Faculty of Engineering

**Expertise**  
Surface chemistry and engineering, tribology and tribocorrosion, lubricants, including environmentally acceptable, nano-tribology.  
Performs basic research on degradation phenomena of surfaces exposed to aggressive chemical environment.  
Research focused on understanding the chemomechanical degradation phenomena starting on surfaces. This knowledge enables finding solutions to make more durable and performing materials, to contribute to a greener world.  
Also perform research on developing new lubricant formulations for the green shift.  
Controlling surface chemistry is the ultimate goal of my research.

**Contact information**  
nuria.espallargas@ntnu.no  
+4746917452

**Relevant projects**  
- Tribocorrosion mechanisms - coatings and metals.
- Multidegradation - the interaction of tribocorrosion with fatigue.
- Experimental nano-tribology.
- Environmentally acceptable lubricants and water lubrication.
- Coatings and surface treatments for tribological contacts.
- Synthesis and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.

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**Bjørn Andersen**  
Department of Mechanical and Industrial Engineering  
Faculty of Engineering

**Expertise**  
Project management, process modelling, performance measurement, stakeholder management

**Expertise specific to this call:**  
Metrics to predict needs for interventions

**Contact information**  
bjorn.andersen@ntnu.no  
+4792602882

**Relevant projects**  
- PRIME  
- TARGET

**Relevant links outside academia**  
Large network through prosjektnorge.no, industry, public sector, etc.
Leonardo Montecchi
Department of Computer Science
Faculty of Engineering

Expertise
Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects
ADVANCE (MSCA-RISE-2018-823788), CONCERTO (ARTEMIS-2012-1-333053), CHESS (ARTEMIS-2008-1-100022)

Govert Valkenburg
Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Expertise
Interpretive social-scientific expertise. Social scientist with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects
My research experience of 20 years has been entirely project-based.
European projects have included:
PRISMS (privacy and security), MILESECURE2050 (low-carbon transitions and energy security).

Quoc Anh Tran
Department of Civil and Environmental Engineering
Faculty of Engineering

Expertise
Computational modeling of landslide/ submarine landslides

Contact information
quoc.a.tran@ntnu.no
+47 41356941

Govert Valkenburg
Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information
govert.valkenburg@ntnu.no
+47 94896748

Relevant links outside academia
ResilTech s.r.l. (Italy):
Instituto Nacional de Pesquisas Espaciais, Brazil (National Space Research Institute of Brazil)
Here you can find potential NTNU researchers that are interested in collaborations on destination 2.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.
Call - RESILIENT VALUE CHAINS 2024 TWO STAGE

Strategic innovation markets driven by advanced materials.


Improving the resilience of EU businesses, especially SMEs and Startups.
DESTINATION 2 - CALLS

Click on the call to be directed to its page

Call - RESILIENT VALUE CHAINS 2024.

Raw Materials for EU open strategic autonomy and successful transition to a climate-neutral and circular economy.

HORIZON-CL4-2024-RESILIENCE-01-01: Exploration of critical raw materials in deep land deposits (RIA)

HORIZON-CL4-2024-RESILIENCE-01-04: Technologies for processing and refining of critical raw materials (IA)

HORIZON-CL4-2024-RESILIENCE-01-08: Rare Earth and magnets innovation hubs (IA)

HORIZON-CL4-2024-RESILIENCE-01-10: Addressing due diligence requirements in raw materials supply chains (CSA)

HORIZON-CL4-2024-RESILIENCE-01-11: Technologies for extraction and processing of critical raw materials (IA)

Safe and Sustainable by Design (SSbD) Chemicals and Materials.

HORIZON-CL4-2024-RESILIENCE-01-24: Development of safe and sustainable by design alternatives (IA)

Improving the resilience of EU businesses, especially SMEs and Startups.

HORIZON-CL4-2024-RESILIENCE-01-41: 'Innovate to transform' support for SME's sustainability transition (CSA)
Steinar Løve Ellefmo
Department of Geosciences and Petroleum
Faculty of Engineering

Contact information
steinar.ellefmo@ntnu.no
+47 905 07 125

Expertise
Mineral resource management including geostatistics, 3D geology modelling and mine planning and -design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

Relevant projects
- Blue Mining and MarMine focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.
- InRec that worked on the implementation of the geometallurgical approach developed primarily for metalliferous deposits in the industrial mineral's sector.
- MAP-project that worked on the development of methodologies and software for mineral resource assessments.

Kurt Aasly
Department of Geoscience and Petroleum
Faculty of Engineering

Contact information
kurt.aasly@ntnu.no
+4793443511

Expertise
- Mineral resources, process mineralogy, mineral characterization, geometallurgy.
- Have been working with industrial minerals (e.g. quartz, carbonates, nepheline syenites), and metallic ores (e.g. sulphide ores, iron- and ilmenite ores, REEs).
- I have also been involved in deep sea mining.

Relevant projects
- MarMine- and Blue Nodules project - both related to characterization of deposits on the ocean floor.
- InRec - developing the geometallurgical approach for the industrial sector.
- Pyrrhotite in concrete aggregates - characterization of concrete aggregates with respect to the occurrence of pyrrhotite in the aggregates.
- Projects related to secondary resources from waste rocks and tailings.
Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information
morten.hovd@itk.ntnu.no
+47 91897189

Expertise
Control engineering applied to the smart grid and/or chemical process industries

Relevant projects
MSCA ITN TEMPO
National Norwegian research projects

Relevant links
outside academia
Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)

Rolf Arne Kleiv

Department of Geoscience and Petroleum
Faculty of Engineering

Contact information
rolf.kleiv@ntnu.no

Expertise
- Mineral processing.
- Comminution, classification and mineral separation.
- Mechanical activation and fine grinding. Product development and waste valorisation.
- Environmental aspects of mineral production.

Relevant projects
- Ultra fine grinding. Production of nano-sized silicon for battery applications.
- Carbon sequestration. Sequestration through mechanical activation and mineral-gas reactions.
- Selective fragmentation. High Pressure Grinding Rolls and High Voltage Pulse Fragmentation.
- Various projects on comminution and mineral separation.
**Steinar Løve Ellefmo**

**Department of Geosciences and Petroleum**  
Faculty of Engineering

**Expertise**  
Mineral resource management including geostatistics, 3D geology modelling and mine planning and design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

**Relevant projects**  
- **Blue Mining and MarMine** focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.  
- **InRec** that worked on the implementation of the geometallurgical approach developed primarily for metalliferous deposits in the industrial mineral’s sector.  
- **MAP-project** that worked on the development of methodologies and software for mineral resource assessments.

**Contact information**  
steinar.ellefmo@ntnu.no  
+47 905 07 125

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**Kurt Aasly**

**Department of Geoscience and Petroleum**  
Faculty of Engineering

**Expertise**  
- Mineral resources, process mineralogy, mineral characterization, geometallurgy.  
- Have been working with industrial minerals (e.g. quartz, carbonates, nepheline syenites), and metallic ores (e.g. sulphide ores, iron- and ilmenite ores, REEs).  
- I have also been involved in deep sea mining.

**Relevant projects**  
- **MarMine- and Blue Nodules project** - both related to characterization of deposits on the ocean floor.  
- **InRec** - developing the geometallurgical approach for the industrial sector.  
- **Pyrrhotite in concrete aggregates** - characterization of concrete aggregates with respect to the occurrence of pyrrhotite in the aggregates.  
- Projects related to secondary resources from waste rocks and tailings.

**Contact information**  
kurt.aasly@ntnu.no  
+4793443511
HORIZON-CL4-2024-RESILIENCE-01-10: Addressing due diligence requirements in raw materials supply chains. (CSA)

Steinar Løve Ellefmo
Department of Geosciences and Petroleum
Faculty of Engineering

Expertise
Mineral resource management including geostatistics, 3D geology modelling and mine planning and design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

Relevant projects
- Blue Mining and MarMine focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.
- InRec that worked on the implementation of the geometallurgical approach developed primarily for metalliferous deposits in the industrial mineral’s sector.
- MAP-project that worked on the development of methodologies and software for mineral resource assessments.

Contact information
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Kurt Aasly
Department of Geoscience and Petroleum
Faculty of Engineering

Expertise
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- Have been working with industrial minerals (e.g. quartz, carbonates, nepheline syenites), and metallic ores (e.g. sulphide ores, iron- and ilmenite ores, REEs).
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Relevant projects
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Contact information
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+473443511
Hakan Basarir
Department of Geosciences and Petroleum
Faculty of Engineering

Contact information
hakan.basarir@ntnu.no
+47 41292371

Relevant links outside academia
Some companies producing critical raw materials

Expertise
Mining engineering,
Rock mechanics, Modelling,
Optimization, the use of soft computing methods in mining engineering

Expertise specific to this call:
Expertise in mineral extraction and modelling & optimization

Relevant projects
Artificial intelligence (AI) based rock property modelling and blast design optimisation

Battery Materials for a Circular Economy: Advancing Certification and Improving Life-Cycle Impacts for Market Advantage

Morten Hovd
Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information
morten.hovd@itk.ntnu.no
+47 91897189

Relevant links outside academia
Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)

Expertise
Control engineering applied to the smart grid and/or chemical process industries

Relevant projects
MSCA ITN TEMPO
National Norwegian research projects

Rolf Arne Kleiv
Department of Geoscience and Petroleum
Faculty of Engineering

Contact information
rolf.kleiv@ntnu.no

Expertise
- Mineral processing.
- Comminution, classification and mineral separation.
- Mechanical activation and fine grinding. Product development and waste valorisation.
- Environmental aspects of mineral production.

Relevant projects
- Ultra fine grinding. Production of nano-sized silicon for battery applications.
- Carbon sequestration. Sequestration through mechanical activation and mineral-gas reactions.
- Selective fragmentation. High Pressure Grinding Rolls and High Voltage Pulse Fragmentation.
- Various projects on comminution and mineral separation.
Steinar Løve Ellefmo
Department of Geosciences and Petroleum
Faculty of Engineering

Contact information
steinar.ellefmo@ntnu.no
+47 905 07 125

Expertise
Mineral resource management including geostatistics, 3D geology modelling and mine planning and -design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

Relevant projects
- **Blue Mining and MarMine** focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.
- **InRec** that worked on the implementation of the geometallurgical approach developed primarily for metalliferous deposits in the industrial mineral’s sector.
- **MAP-project** that worked on the development of methodologies and software for mineral resource assessments.

Kurt Aasly
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Faculty of Engineering

Contact information
kurt.aasly@ntnu.no
+473443511

Expertise
- Mineral resources, process mineralogy, mineral characterization, geometallurgy.
- Have been working with industrial minerals (e.g. quartz, carbonates, nepheline syenites), and metallic ores (e.g. sulphide ores, iron- and ilmenite ores, REEs).
- I have also been involved in deep sea mining.

Relevant projects
- **MarMine- and Blue Nodules project** - both related to characterization of deposits on the ocean floor.
- **InRec** - developing the geometallurgical approach for the industrial sector.
- **Pyrrhotite in concrete aggregates** - characterization of concrete aggregates with respect to the occurrence of pyrrhotite in the aggregates.
- Projects related to secondary resources from waste rocks and tailings.
Andreas Erbe
Department of Materials Science and Engineering
Faculty of Natural Science

Contact information
andreas.erbe@ntnu.no
+47 73594048

Relevant links outside academia
Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise
- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects
Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN

Fabio Sgarbossa
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
fabio.sgarbossa@ntnu.no
+4790768098

Relevant links outside academia
Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise
- Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG
Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information
govert.valkenburg@ntnu.no
+47 94896748

Expertise
Interpretive social-scientific expertise. Social scientist with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects
My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),

MILESECURE2050 (low-carbon transitions and energy security).

Astrid S. de Wijn

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
astrid.dewijn@ntnu.no

Expertise
Theory and modelling - tribology, surface science, transport properties, nonlinear dynamics, condensed matter

We develop models for transport of matter, energy, and momentum, and relate it to microscopic nonlinear dynamics. We currently focus on two types of systems:

1) molecules and nanoscale objects, especially in the context of friction, and
2) gases and liquids of various levels of complexity.

We employ computational (Molecular Dynamics and Monte-Carlo) as well as analytical methods to solve applied and fundamental problems. We collaborate with experimental as well as theoretical researchers from a wide variety of fields, ranging from chemical engineering to mathematical physics. The materials we study the most at the moment are electrolytes, polymers, and 2d materials.
Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

Contact information
andreas.erbe@ntnu.no
+47 73594048

Expertise
- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects
Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN

Astrid S. de Wijn

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
astrid.dewijn@ntnu.no

Expertise
- Theory and modelling - tribology, surface science, transport properties, nonlinear dynamics, condensed matter

We develop models for transport of matter, energy, and momentum, and relate it to microscopic nonlinear dynamics. We currently focus on two types of systems:

1) molecules and nanoscale objects, especially in the context of friction, and
2) gases and liquids of various levels of complexity.

We employ computational (Molecular Dynamics and Monte-Carlo) as well as analytical methods to solve applied and fundamental problems. We collaborate with experimental as well as theoretical researchers from a wide variety of fields, ranging from chemical engineering to mathematical physics. The materials we study the most at the moment are electrolytes, polymers, and 2d materials.
Nuria Espallargas
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Expertise
Surface chemistry and engineering, tribology and tribocorrosion, lubricants, including environmentally acceptable, nano-tribology.
Performs basic research on degradation phenomena of surfaces exposed to aggressive chemical environment.
Research focused on understanding the chemomechanical degradation phenomena starting on surfaces. This knowledge enables finding solutions to make more durable and performing materials, to contribute to a greener world.
Also perform research on developing new lubricant formulations for the green shift. Controlling surface chemistry is the ultimate goal of my research.

Contact information
nuria.espallargas@ntnu.no
+4746917452

Relevant projects
• Tribocorrosion mechanisms - coatings and metals.
• Multidegradation - the interaction of tribocorrosion with fatigue.
• Experimental nano-tribology.
• Environmentally acceptable lubricants and water lubrication.
• Coatings and surface treatments for tribological contacts.
• Synthesis and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.

Andreas Erbe
Department of Materials Science and Engineering
Faculty of Natural Science

Expertise
• Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
• Materials interaction with environment (incl. complex biological environments in the body)
• Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
• Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
• Electrochemical techniques
• Data analysis and machine learning techniques in relation to the above

Contact information
andreas.erde@ntnu.no
+47 73594048

Relevant links outside academia
Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Relevant projects
Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN
Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
fabio.sgarbossa@ntnu.no
+4790768098

Expertise
Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Kjersti Kjos Longva

Department of International Business
Faculty of Economics and Management

Contact information
kjersti.kjos.longva@ntnu.no
+47 70 16 12 94

Relevant links outside academia
Industry, cluster organizations, entrepreneurs and public sector.

Expertise
Entrepreneurship, SMEs, entrepreneurship education, innovation in education, management education, innovation skills, innovation processes, university-industry collaboration, sustainable business models.

Relevant projects
ERASMUS+ project BLUEWBC Sustainable development of BLUE Economics through higher education and innovation in Western Balkan Countries.
InnoPraksis - Innovative internships in business education.
TEFT-lab at NTNU.
Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information
eilif.hjelseth@ntnu.no
+4795266100

Relevant links
outside academia
Board member of BuildingSMART Norway
Head of the digitalization group at Prosjekt Norge

Expertise
- Digitalization of construction processes
- Building Information Modelling (BIM)
- Virtual Design and Construction (VDC)
- Development of knowledge-based expert systems
- Transformation of codes and regulations into automatic/semiautomatic validations
- Digitalization of sustainability requirements
- Change management
- Digital solutions for Project management
- Information Managements
- Standardization

Relevant projects
- DigiPlace - Development of a framework for a digital European platform
- Growing Circle - digital solution for increased circularity, digital passport and digital twins
- Bridging the Gap - Holistic requirement for the entire lifecycle
- Standardization at international (ISO), European (CEN) and national (NS) levels

Elli Verhulst

Department of Industrial Economics and Technology Management
Faculty of Economics and Management

Contact information
elli.verhulst@ntnu.no
+47 73590164

Expertise
Sustainable innovation and entrepreneurship, interdisciplinary collaboration, human factors sustainable/circular business models, integration processes, method and tool development

Relevant projects
- Integration of sustainability in innovation processes at SMEs - different projects
- Tools and method development for sustainable innovation and entrepreneurship - different projects
- Digifab, supporting SMEs to move towards Industry 4.0 (NFR funding)
- Prisms Practical and Innovative Solutions for Manufacturing Sustainability (University of Cambridge, IfM ECS)
- HoE-LIB – Developing a Holistic Ecosystem for Sustainable Repurposing and/or Recycling of Lithium-ion Batteries (LIBs) in Norway and EU (NTNU Sustainability)
- MINDER - Methodologies for Improvement of Non-residential buildings’ Day-to-day Energy efficiency Reliability (NFR funding)
- SFU Engage – Entrepreneurship education for educators (HKdir)
Erlend Alfnes

Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
erlend.alfnes@ntnu.no
+4709291145

Expertise
- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects

European projects:
- Lean 4.0: Lean European Action-learning Network utilizing Industry 4.0
- EuroLean+: European Lean Enterprise Alliance

National projects:
- Respons: Smart planning in supply chains for manufacturing of advanced ship equipment
- Soundchain: Effective supply chains for manufacturing of underwater sensor systems
ASSOCIATED PROFESSORS

Destination 3:
World leading data and computing technologies

Here you can find potential NTNU researchers that are interested in collaborations on destination 3.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.
**Call - World leading data and computing technologies.**

Data sharing and analytics capacity.

**HORIZON-CL4-2024-DATA-01-01: AI-driven data operations and compliance technologies (AI, data and robotics partnership) (IA)**

From Cloud to Edge to IoT for European Data.

**HORIZON-CL4-2024-DATA-01-03: Piloting emerging Smart IoT Platforms and decentralized intelligence (IA)**

**HORIZON-CL4-2024-DATA-01-05: Platform Building, standardisation and Up-scaling of the ‘Cloud-Edge-IoT’ Solutions (Horizontal Activities - CSA)**
Eleftherios Papachristou
Department of Design
Faculty of Architecture and Design

Expertise
- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces, Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Contact information
eleftherios.papachristos@ntnu.no
+47 47707238

Relevant projects
- rurALLURE (EU H2020 CSA)
- INTER-SOCIAL (EU INTERREG)
- SERIES (EU FP7 CSA)
- QALIBRA (EU FP6 CSA)

Ilangko Balasingham
Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Expertise
- Microscale antennas and wireless communication systems
- Passive (battery-free) wireless communication methods
- Passive microimplants for actuation, sensing and communication
- Medical signal and image processing using machine learning algorithms
- Molecular communication technology (nanoscale communication modeling and data inference

Contact information
ilangko.balasingham@ntnu.no
+47 93459022

Relevant links outside academia
Industry (medtech)

Relevant projects


3. Principle Investigator of 5G HEalh AquacultuRe and Transport validation trials (5G-HEART), (Funded by the EC H2020:ICT, 01.07.2019-30.06.2022, award EUR 14.3 million)


6. Work Package Leader of ULTRASPONDER, (Funded by the European Union 7th Framework Program, STREP, 01.09.2008-31.08.2011, award EUR 4.5 million)
Jingyue Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
jingyue.li@ntnu.no
+47 91897446

Expertise
Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
software engineering, AI robustness, cybersecurity

Relevant projects
A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)
CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI)

Contact information
Relevant links
outside academia
DNV, SINTEF, Equinor, NGI, NAV

Jingyu Li

CIRCit - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)
Model-Based Testing of Spacecraft Control Software (2011-2013) (PI)

Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information
eilif.hjelseth@ntnu.no
+4795266100

Relevant links
outside academia
Board member of BuildingSMART Norway
Head of the digitalization group at Prosjekt Norge

Expertise
Digitalization of construction processes
Building Information Modelling (BIM)
Virtual Design and Construction (VDC)
Development of knowledge-based expert systems
Transformation of codes and regulations into automatic/semiautomatic validations
Digitalization of sustainability requirements
Change management
Digital solutions for Project management
Information Managements
Standardization

Relevant projects
DigiPlace - Development of a framework for a digital European platform
Growing Circle - digital solution for increased circularity, digital passport and digital twins
Bridging the Gap - Holistic requirement for the entire lifecycle
Standardization at international (ISO), European (CEN) and national (NS) levels
Arvind Sharma
Department of Information Security and Communication Technology
Faculty of Information Technology and Electrical Engineering

Contact information
arvind.sharma@ntnu.no
+47 46710948

Expertise

Expertise specific to this call:
Technology assessment, testing, product development, techno-economic study

Relevant projects
Norwegian centre of Cyber Security for Critical infrastructurer (NORCICS)

Kjersti Kjos Longva
Department of International Business
Faculty of Economics and Management

Contact information
kjersti.kjos.longva@ntnu.no
+47 70 16 12 94

Expertise
Entrepreneurship, SMEs, entrepreneurship education, innovation in education, management education, innovation skills, innovation processes, university-industry collaboration, sustainable business models.

Relevant projects
ERASMUS+ project BLUEWBC Sustainable development of BLUE Economics through higher education and innovation in Western Balkan Countries.
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Faculty of Engineering

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Expertise
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Relevant projects
EU projects: Lean 4.0; H2GLASS; MAIA; DE2HUMAN
National projects: Digimat; DigCBA; SmartLIB; FutureLOG
Ilango Balasingham

Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Expertise
- Microscale antennas and wireless communication systems
- Passive (battery-free) wireless communication methods
- Passive microimplants for actuation, sensing and communication
- Medical signal and image processing using machine learning algorithms
- Molecular communication technology (nanoscale communication modeling and data inference)

Relevant projects
3. **Principle Investigator of 5G HEalth AquacultuRe and Transport validation trials (5G-HEART)**, (Funded by the EC H2020:ICT, 01.07.2019-30.06.2022, award EUR 14.3 million)
5. **Coordinator/Principle Investigator of Wireless In-Body Environment (WiBEC)**, (Funded by the EC, H2020- MARIE Skodowska-CURIE ACTIONS (MSCA-ITN-2015), 01.01.2016-31.12.2019, award EUR 3.957 million)
6. **Work Package Leader of ULTRASPOUNDER**., (Funded by the European Union 7th Framework Program, STREP, 01.09.2008 -31.08.2011, award EUR 4.5 million)

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Per Gunnar Kjeldsberg

Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Expertise
Embedded heterogeneous multi-processor systems, with a focus on energy efficient multi-media and digital signal processing applications.

Relevant projects
- Run-time Exploitation of Application Dynamism for Energy-efficient Exascale computing [LINK](#)
- Towards Ubiquitous Low-power Image Processing Platforms [LINK](#)
- Low Power and Fault Tolerant Cache Memory Design through a Combination of Hardware and Software Approaches [LINK](#)

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Ilango.Balasingham@ntnu.no
+47 93459022

Relevant links outside academia
Industry (medtech)
Jingyue Li
Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
jingyue.li@ntnu.no
+47 91897446

Expertise
Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
Blockchain, software engineering, AI robustness, cybersecurity

Relevant projects
A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)
CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI) -

Relevant links outside academia
DNV, SINTEF, Equinor, NGI, NAV

Arvind Sharma
Department of Information Security and Communication Technology
Faculty of Information Technology and Electrical Engineering

Contact information
arvind.sharma@ntnu.no
+47 46710948

Expertise

Expertise specific to this call:
Technology assessment, testing, product development, techno-economic study

Relevant projects
Norwegian centre of Cyber Security for Critical infrastructurer (NORCICS)
Per Gunnar Kjeldsberg

Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Contact information
pgk@ntnu.no
+47 7359 4405

Expertise
Embedded heterogeneous multi-processor systems, with a focus on energy efficient multi-media and digital signal processing applications.

Relevant projects
Run-time Exploitation of Application Dynamism for Energy-efficient Exascale computing [LINK]
Towards Ubiquitous Low-power Image Processing Platforms [LINK]
Low Power and Fault Tolerant Cache Memory Design through a Combination of Hardware and Software Approaches [LINK]

Arvind Sharma

Department of Information Security and Communication Technology
Faculty of Information Technology and Electrical Engineering

Contact information
arvind.sharma@ntnu.no
+47 46710948

Expertise

Expertise specific to this call:
Technology assessment, testing, product development, techno-economic study

Relevant projects
Norwegian centre of Cyber Security for Critical infrastructurer (NORCICS)
ASSOCIATED PROFESSORS

Destination 4:
Digital and emerging technologies for competitiveness and fit for the green deal

Here you can find potential NTNU researchers that are interested in collaborations on destination 4.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.
Call - Digital and emerging technologies for competitiveness and fit for the Green Deal

AI, Data and Robotics (incl. efficient, robust, safe, adaptive and trusted robots)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-03: Novel paradigms and approaches, towards AI-powered robots—step change in functionality (AI, data and robotics partnership) (RIA)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-04: Industrial leadership in AI, Data and Robotics boosting competitiveness and the green transition (AI Data and Robotics Partnership) (IA)

Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy


European Innovation Leadership in Photonics.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-54: Smart photonics for joint communication & sensing and access everywhere (Photonics Partnership) (RIA)

Call - Digital and emerging technologies for competitiveness and fit for the Green Deal

Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy

HORIZON-CL4-2024-DIGITAL-EMERGING-01-21: Open Source for Cloud/Edge to support European Digital Autonomy (RIA)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-23: Public recognition scheme for Open Source (CSA)

Graphene and 2D materials: Europe in the lead.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-31: Pilot line(s) for 2D materials-based devices (RIA)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-34: Synergy with national and regional initiatives in Europe (CSA)

Flagship on Quantum Technologies: a Paradigm Shift

HORIZON-CL4-2024-DIGITAL-EMERGING-01-42: Stimulating transnational research and development of next generation quantum technologies, including basic theories and components (Cascading grant with FSTP)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-45: Quantum sensing and metrology for market uptake (IA)
Hedvig Aminoff

Department of Design
Faculty of Architecture and Design

Expertise
- Human Centered Design
- Human-machine interaction
- Human Factors and Systems safety
- Resilience engineering/Cognitive Systems Engineering
- Qualitative research
- Ethnographic methods
- Information visualisation

Expertise specific to this call:
Human-machine interaction, human factors, UX design and usability assessment

Relevant projects
LASH FIRE- a Horizon2020 project for developing maritime fire safety solutions with innovative technologies, operations and applications. A consortium with 26 partners from 13 Member States of the EU.

Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

Expertise
Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.
- System-level Verification & Validation,
- Model-Based Systems Engineering,
- Model-Driven Engineering,

Relevant projects
ADVANCE (MSCA-RISE-2018-823788),
CONCERTO (ARTEMIS-2012-1-333053),
CHESS (ARTEMIS-2008-1-100022)

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Relevant links outside academia
ResiITech s.r.l. (Italy):
Instituto Nacional de Pesquisas Espaciais, Brazil
(National Space Research Institute of Brazil)
Jingyue Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
jingyue.li@ntnu.no
+47 91897446

Expertise
Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
Software verification and validation, AI robustness, cybersecurity

Relevant projects
A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab) (2020-2021) (PI)
CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI)

Relevant links outside academia
DNV, SINTEF, Equinor, NGI, NAV

Jingyu Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
eleftherios.papachristos@ntnu.no
+47 47707238

Expertise
Human-Centred Artificial Intelligence design
Human-Computer Interaction
Interaction design
Conversational Interfaces,
Value-centered AI
Ethics/trust/transparency and AI
Interface Evaluation.

Relevant projects
rurALLURE (EU H2020 CSA)
INTER-SOCIAL (EU INTERREG)
SERIES (EU FP7 CSA)
QALIBRA (EU FP6 CSA)
HORIZON-CL4-2024-DIGITAL-EMERGING-01-04: INDUSTRIAL LEADERSHIP IN AI, DATA AND ROBOTICS BOOSTING COMPETITIVENESS AND THE GREEN TRANSITION (AI DATA AND ROBOTICS PARTNERSHIP)

Hedvig Aminoff
Department of Design
Faculty of Architecture and Design

Contact information
hedvig.aminoff@gmail.com
+46734606075

Expertise
- Human Centered Design
- Human-machine interaction
- Human Factors and Systems safety
- Resilience engineering/Cognitive Systems Engineering
- Qualitative research
- Ethnographic methods
- Information visualisation

Expertise specific to this call:
Human-machine interaction, human factors, UX design and usability assessment

Relevant projects
LASH FIRE: a Horizon2020 project for developing maritime fire safety solutions with innovative technologies, operations and applications. A consortium with 26 partners from 13 Member States of the EU.

Fabio Sgarbossa
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
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Expertise
- Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0,
- Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Expertise specific to this call:

Relevant projects
EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG

Eleftherios Papachristou
Department of Design
Faculty of Architecture and Design

Contact information
eleftherios.papachristos@ntnu.no
+47 47707238

Expertise
- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects
ru ALLURE (EU H2020 CSA)
INTER-SOCIAL (EU INTERREG)
SERIES (EU FP7 CSA)
QALIBRA (EU FP6 CSA)
Leonardo Montecchi
Department of Computer Science
Faculty of Engineering

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Relevant links outside academia
ResiTech s.r.l. (Italy):
Instituto Nacional de Pesquisas Espaciais, Brazil (National Space Research Institute of Brazil)

Expertise
Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

Relevant projects
ADVANCE (MSCA-RISE-2018-823788),
CONCERTO (ARTEMIS-2012-1-333053),
CHESS (ARTEMIS-2008-1-100022)

Jingyue Li
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Faculty of Information Technology and Electrical Engineering

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+47 91897446

Relevant links outside academia
DNV, SINTEF, Equinor, NGI, NAV

Expertise
Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
Software verification and validation, AI robustness, cybersecurity

Relevant projects
A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)
CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI) -

CIRCit - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)
SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)
Jingyue Li

**Department of Computer Science**
Faculty of Information Technology and Electrical Engineering

**Contact information**
jingyue.li@ntnu.no
+47 91897446

**Expertise**
Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

**Expertise specific to this call:**
Software engineering, open source

**Relevant links outside academia**
DNV, SINTEF, Equinor, NGI, NAV

**Relevant projects**

**Platform** as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSforChain) (2020-2023) (PI)

**A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients** (SmartRehab)(2020-2021)(PI)

**CyberSmart** - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI)-


**CIRCit** - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)

**SAREPTA** - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)

**SafeCop** – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)

**Model**-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)
Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

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leonardo.montecchi@ntnu.no
+47 4628 6498

Expertise
Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.
System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects
ADVANCE (MSCA-RISE-2018-823788),
CONCERTO (ARTEMIS-2012-1-333053),
CHESS (ARTEMIS-2008-1-100022)

Relevant links
ResilTech s.r.l. (Italy):
Instituto Nacional de Pesquisas Espaciais, Brazil (National Space Research Institute of Brazil)

Jingyue Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
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+47 91897446

Expertise
Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
Software engineering, open source, software security, blockchain software engineering

Relevant projects
A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)
CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI) -

CIRCit - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)
SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)
Govert Valkenburg
Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information
govert.valkenburg@ntnu.no
+47 94896748

Expertise
Interpretive social-scientific expertise. Social scientist with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects
My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),
MILESECURE2050 (low-carbon transitions and energy security).

Astrid S. de Wijn
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
astrid.dewijn@ntnu.no

Expertise
Theory and modelling - tribology, surface science, transport properties, nonlinear dynamics, condensed matter

We develop models for transport of matter, energy, and momentum, and relate it to microscopic nonlinear dynamics. We currently focus on two types of systems:

1) molecules and nanoscale objects, especially in the context of friction, and
2) gases and liquids of various levels of complexity.

We employ computational (Molecular Dynamics and Monte-Carlo) as well as analytical methods to solve applied and fundamental problems. We collaborate with experimental as well as theoretical researchers from a wide variety of fields, ranging from chemical engineering to mathematical physics. The materials we study the most at the moment are electrolytes, polymers, and 2d materials.
Jingyue Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
jingyue.li@ntnu.no
+47 91897446

Expertise
Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
Software engineering, open source, software security

Relevant links outside academia
DNV, SINTEF, Equinor, NGI, NAV

Relevant projects
A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)
CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI) -

CIRCit - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)
SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)
Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

Contact information
andreas.erbe@ntnu.no
+47 73594048

Relevant links outside academia
Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise
- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects
Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN
Andreas Erbe
Department of Materials Science and Engineering
Faculty of Natural Science

Contact information
andreas.erbe@ntnu.no
+47 73594048

Relevant links
outside academia
Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise
- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects
Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN
ASSOCIATED PROFESSORS

Destination 5:

Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

Here you can find potential NTNU researchers that are interested in collaborations on destination 5.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.
Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2024.

Reinforce EU capacity to access to space.

Evolution of services: Copernicus.

HORIZON-CL4-2024-SPACE-01-35: Copernicus for Land and Water


Development of applications for Galileo, EGNOS and Copernicus, PRS and GOVSATCOM...

Innovative space capabilities: SSA, GOVSATCOM, Quantum..

HORIZON-CL4-2024-SPACE-01-64: Quantum Space Gravimetry Phase-B study & Technology Maturation.

Targeted and strategic actions supporting the EU space sector


Evolution of Galileo and EGNOS services and infrastructure.
ASSOCIATED PROFESSORS

Destination 6:

A human-centred and ethical development of digital and industrial technologies

Here you can find potential NTNU researchers that are interested in collaborations on destination 6.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.
Digital Humanism and human compatible technologies.

HORIZON-CL4-2023-HUMAN-01-81: Digital Humanism - Putting people at the centre of the digital transformation (CSA)

**Call - A human-centred and ethical development of digital and industrial technologies.**

Leadership in AI based on trust

HORIZON-CL4-2024-HUMAN-01-06: Explainable and Robust AI (AI Data and Robotics Partnership) (RIA)

HORIZON-CL4-2024-HUMAN-01-07: Collaborative intelligence – combining the best of machine and human (AI Data and Robotics Partnership) (RIA)

Systemic approaches for accelerating uptake of technology and innovation.

HORIZON-CL4-2024-HUMAN-01-34: Support for transnational activities of National Contact Points in the thematic areas of Digital, Industry and Space (CSA)

European standards for industrial competitiveness.

HORIZON-CL4-2024-HUMAN-01-61: Facilitate the engagement in global ICT standardisation development (CSA)
Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Expertise
Interpretive social-scientific expertise. Social scientist with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects
My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),
MILESECURE2050 (low-carbon transitions and energy security).

Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

Expertise
Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects
ADVANCE (MSCA-RISE-2018-823788),
CONCERTO (ARTEMIS-2012-1-333053),
CHESS (ARTEMIS-2008-1-100022)
Eleftherios Papachristou
Department of Design
Faculty of Architecture and Design

Contact information
eleftherios.papachristos@ntnu.no
+47 47707238

Expertise
- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects
- rurALLURE (EU H2020 CSA)
- INTER-SOCIAL (EU INTERREG)
- SERIES (EU FP7 CSA)
- QALIBRA (EU FP6 CSA)

Jingyue Li
Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information
jingyue.li@ntnu.no
+47 91897446

Expertise
- Software engineering, Software verification and validation,
- Blockchain technologies, Software security, AI robustness

Expertise specific to this call:
- software verification and validation, AI robustness,
- cybersecurity

Relevant projects
- Platform as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSForChain) (2020-2023) (PI)
- A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)
- CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI)
- SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
- SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
- Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)

Relevant links outside academia
- SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
- SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
- Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)
Lars Tingelstad
Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
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+47 97736854

Expertise
Robotics and automation:
- Industrial robots
- Robotic production
- Robotic manipulation
- Mobile manipulators
- Constraint-based robot programming
- Computer vision, robot learning

Erlend Alfnes
Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
erlend.alfnes@ntnu.no
+4709291145

Expertise
- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects
European projects:
- Lean 4.0: Lean European Action-Learning Network utilizing Industry 4.0
- EuroLean+: European Lean Enterprise Alliance

National projects:
- Respons: Smart planning in supply chains for manufacturing of advanced ship equipment
- Soundchain: Effective supply chains for manufacturing of underwater sensor systems
HORIZON-CL4-2024-HUMAN-01-07: COLLABORATIVE INTELLIGENCE – COMBINING THE BEST OF MACHINE AND HUMAN (AI DATA AND ROBOTICS PARTNERSHIP) (RIA)

**Jingyue Li**

**Department of Computer Science**  
Faculty of Information Technology and Electrical Engineering

**Contact information**  
jingyue.li@ntnu.no  
+47 91897446

**Expertise**  
Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

**Expertise specific to this call:**  
Automatic code generation using AI models to help developers speed up software development

**Relevant projects**
- **Platform** as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSforChain) (2020-2023) (PI)
- **A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients** (SmartRehab)(2020-2021) (PI)
- **CyberSmart** - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI)
- **CIRCit** - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)
- **SAREPTA** - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
- **SafeCop** – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
- **Model-Based Testing of Spacecraft Control Software** (2011-2013) (Key Scientist)

**Eleftherios Papachristou**

**Department of Design**  
Faculty of Architecture and Design

**Contact information**  
eleftherios.papachristos@ntnu.no  
+47 47707238

**Expertise**  
- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

**Relevant projects**
- **rurALLURE** (EU H2020 CSA)
- **INTER-SOCIAL** (EU INTERREG)
- **SERIES** (EU FP7 CSA)
- **QUALIBRA** (EU FP6 CSA)

**Relevant links**
- **CIRCit** - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)
- **SAREPTA** - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)
- **SafeCop** – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)
- **Model-Based Testing of Spacecraft Control Software** (2011-2013) (Key Scientist)
Hedvig Aminoff
Department of Design
Faculty of Architecture and Design

Contact information
hedvig.aminoff@gmail.com
+46734606075

Expertise
- Human Centered Design
- Human-machine interaction
- Human Factors and Systems safety
- Resilience engineering/Cognitive Systems Engineering
- Qualitative research
- Ethnographic methods
- Information visualisation

Expertise specific to this call:
Human-machine interaction, human factors, UX design and usability assessment

Relevant projects
LASH FIRE - a Horizon2020 project for developing maritime fire safety solutions with innovative technologies, operations and applications. A consortium with 26 partners from 13 Member States of the EU.

Erlend Alfnes
Mechanical and Industrial Engineering
Faculty of Engineering

Contact information
erlend.alfnes@ntnu.no
+4709291145

Expertise
- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects
European projects:
- Lean 4.0: Lean European Action-learning Network utilizing Industry 4.0
- EuroLean+: European Lean Enterprise Alliance

National projects:
- Respons: Smart planning in supply chains for manufacturing of advanced ship equipment
- Soundchain: Effective supply chains for manufacturing of underwater sensor systems
Jingyue Li

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**Relevant links**
outside academia
DNV, SINTEF, Equinor, NGI, NAV

**Expertise**
Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

**Expertise specific to this call:**
Software verification and validation, AI robustness,
cybersecurity

**Relevant projects**

- **Platform** as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSforChain) (2020-2023) (PI)

- **A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients** (SmartRehab)(2020-2021)(PI)

- **CyberSmart** - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI)


- **CIRCit** - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)

- **SAREPTA** - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)

- **SafeCop** – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)

- **Model-Based Testing of Spacecraft Control Software** (2011-2013) (Key Scientist)