

# HORIZON EUROPE CALLS 2023/2024

## CLUSTER 3 CIVIL SECURITY FOR SOCIETY



 NTNU

**NTNU** digital in Europe: List of calls with  
their respective interested NTNU researchers

**Proposed by:** NTNU Brussels office, NTNU digital and IE Faculty

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# INTRODUCTION



## Dear Reader,

Are you looking for the best researchers with whom to collaborate on Horizon Europe cluster 3 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 FOR A BETTER WORLD

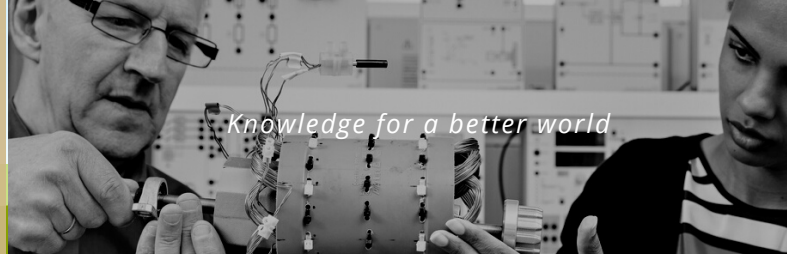
Knowledge provides people with opportunities and influence, as well as a foundation for making wise choices. Knowledge inspires and challenges. It changes attitudes, mindsets, and how we perceive the world around us. Informed debate strengthens our democracy. NTNU's activities should benefit society 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.**



# ABOUT NTNU



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:



# NTNU BRUSSELS OFFICE



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 colleague active in or willing to enter the European Arena.

NTNU opened the doors to 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 only several 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.



# FACULTY OF INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

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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](#)

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# Horizon 2020

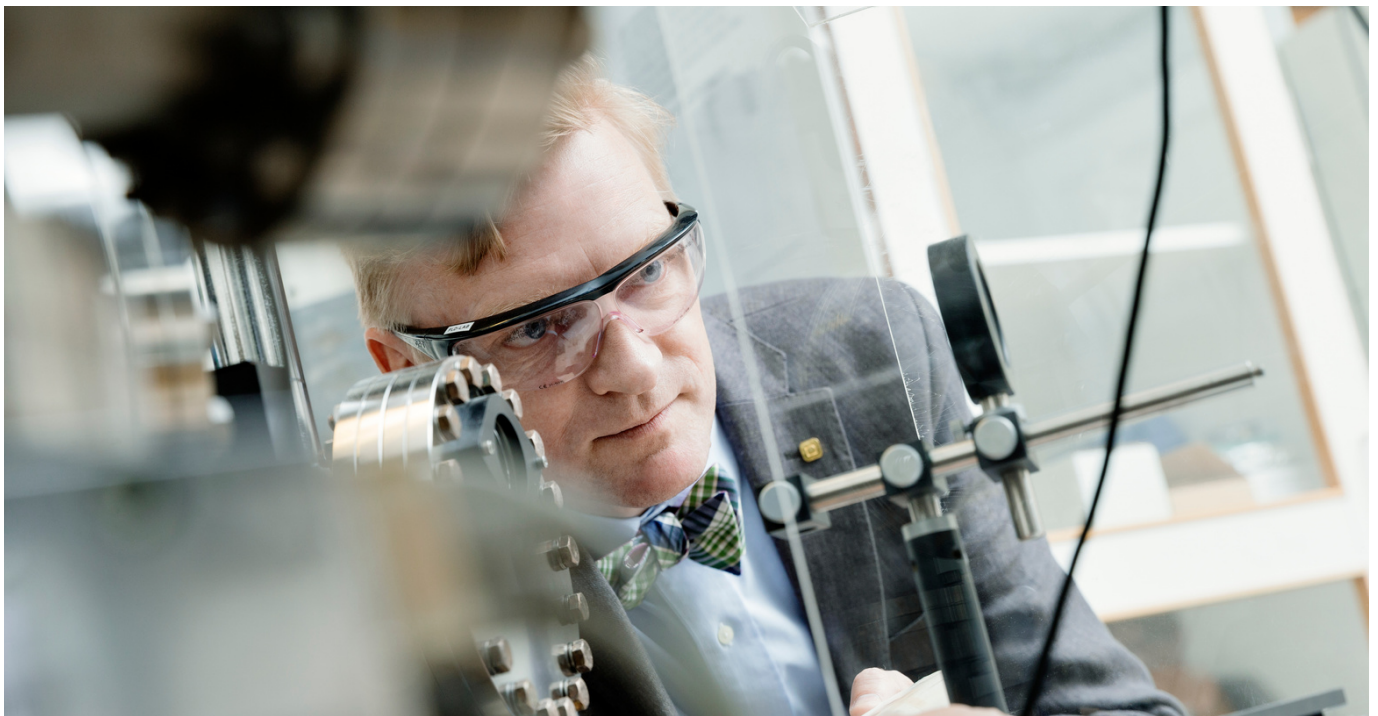
*IE Faculty participation*

## 65

### RESEARCH PROJECTS

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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.





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# 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.

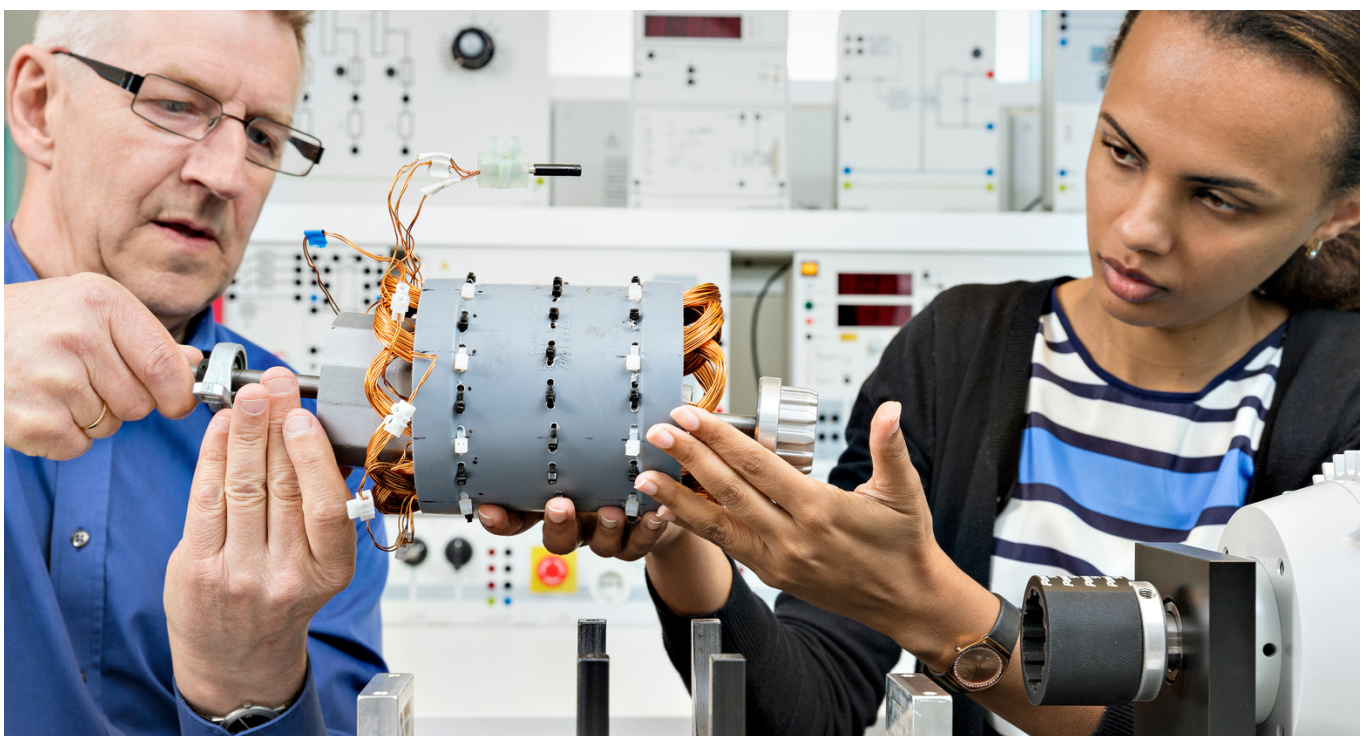
Our PhD programs are popular for national and international students, either at a program within our faculty:

- [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](#)





# COLLABORATING WITH NTNU

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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 at through the NTNU Brussels Office.

[All the brochures are available here.](#)

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

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### [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 – [Medya Temelli Fenerci](#)



## RESEARCHERS



# Destination 1:

## Better protect the EU and its citizens against Crime and Terrorism

Here you can find potential NTNU professors and employees that are interested in collaborations on destination 1.

The following pages are sorted by the calls for the destination presented in the work programme for cluster 3. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.



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# DESTINATION 1 - CALLS

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Click on the call to be directed to its page

## Call - Fighting Crime and Terrorism 2024

FCT01 - Modern information analysis for fighting crime and terrorism

[HORIZON-CL3-2024-FCT-01-01: Mitigating new threats and adapting investigation strategies in the era of Internet of Things](#)

FCT02 - Improved forensics and lawful evidence collection

[HORIZON-CL3-2024-FCT-01-02: Open topic](#)

HORIZON-CL3-2024-FCT-01-03: Lawful evidence collection in online child sexual abuse investigations, including undercover

FCT03 – Enhanced prevention, detection and deterrence of societal issues related to various forms of crime

HORIZON-CL3-2024-FCT-01-04: Radicalisation and gender

FCT04 – Increased security of citizens against terrorism, including in public spaces

HORIZON-CL3-2024-FCT-01-05: CBRN-E detection capacities in small architecture

FCT06 – Citizens are protected against cybercrime

HORIZON-CL3-2024-FCT-01-06: Tracing of cryptocurrencies transactions related to criminal purposes



## 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).



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## RESEARCHERS



# Destination 2:

## Effective Management of EU external borders

Here you can find potential NTNU professors and employees that are interested in collaborations on destination 2.

The following pages are sorted into the calls for the destination presented in the work programme for cluster 3. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

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# DESTINATION 2 - CALLS

Click on the call to be directed to its page

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## Call - Border Management 2024

BM01 – Efficient border surveillance and maritime security

[HORIZON-CL3-2024-BM-01-01: Interoperability for border and maritime surveillance and situational awareness](#)

BM02 – Secured and facilitated crossing of external borders

[HORIZON-CL3-2024-BM-01-02: Advanced user-friendly, compatible, secure identity and travel document management](#)

[HORIZON-CL3-2024-BM-01-03: Integrated risk-based border control that mitigates public security risk, reduces false positives and strengthens privacy](#)

BM03 – Better customs and supply chain security

[HORIZON-CL3-2024-BM-01-04: Detection and tracking of illegal and trafficked goods](#)



## Mohammadreza Aghaei

Department of Ocean Operations and Civil Engineering  
Faculty of Engineering

### Contact information

mohammadreza.aghaei@ntnu.no  
+47 40635872

### Relevant links outside academia

Many Industry/public sector/  
NGOs in the field of Energy,  
Renewables, Power generation,  
Solar PV industries, Smart  
Buildings, Aerial Monitoring,  
Unmanned Aerial Vehicle,  
Internet of Thing, Artificial  
Intelligence.

### Expertise

**Energy:** Energy Systems, Energy Flexibility, Energy Building, Smart building,  
Smart Grid, Demand/Supply Side Management.

**Renewable Energy:** Renewable Energy Integration, Solar Photovoltaic Energy,  
Solar Cells, Photovoltaic Module/Component/System, Photovoltaic Power  
Plant, Integrated Photovoltaics (BiPV, ViPV, LSCPV, Floating PV, Agrivoltaic),  
Reliability and Durability of Photovoltaics. Autonomous Monitoring and  
Analysis: Autonomous Aerial Monitoring, Autonomous Faults Detection,  
Autonomous Control and Monitoring Systems, Autonomous Remote Sensing.  
Enabling Technologies: Unmanned Aerial Vehicle (UAV), Artificial Intelligence  
(AI), Deep/Machine Learning, Digital Twin (DT), Big Data Analysis (BDA),  
Internet of Thing (IoT), Satellite Data. Photonics: Luminescent Solar  
Concentrator, Optical Materials, Ray Tracing.

### Relevant projects

- Experiences in several national and EU-funded projects:
- COLLECTiEF – Collective Intelligence for Energy Flexibility.  
Role: Coordinator
- Performance and Reliability of Photovoltaic Systems:  
Evaluations of Large-scale Monitoring Data (PEARL PV)  
Role: WG chair/WG vice-chair/Core group member/  
Member of committee
- SOLAB - Outdoor Test Field for Solar Energy Research  
Role: Project manager
- Autonomous and Intelligent Monitoring Based on  
UAV and IoT Platform for Large-Scale PV Plants  
(AimPV) Role: Coordinator/Project manager
- The Research Center for Sustainable Solar Cell  
Technology (SUSOLTECH)
- Energy Systems Integration (ESI)
- MyCIGS collaborative research project –  
improving copper-indium-gallium-sulphide (CIGS)  
thin-film production





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**MILESECURE2050** (low-carbon transitions and energy security).



## RESEARCHERS



# Destination 3:

## Resilient Infrastructure

Here you can find potential NTNU professors and employees that are interested in collaborations on destination 3.

The following pages are sorted into the calls for the destination presented in the work programme for cluster 3. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.



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# DESTINATION 3 - CALLS

Click on the call to be directed to its page

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## **Call - Resilient Infrastructure 2024**

INFRA02 – Resilient and secure urban areas and smart cities

[HORIZON-CL3-2024-INFRA-01-01: Resilient and secure urban planning and new tools for EU territorial entities](#)

[HORIZON-CL3-2024-INFRA-01-02: Advanced real-time data analysis used for infrastructure resilience](#)



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### Relevant projects

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European projects have included:

**PRISMS** (privacy and security),

**MILESECURE2050** (low-carbon transitions and energy security).



## Dimitrios Tzioutzios

Department of Mechanical and Industrial Engineering  
Faculty of Engineering

### Contact information

dimitrios.tzioutzios@ntnu.no

### Relevant link outside academia

Local government organisations in Japan, Colombia and Greece

First responder associations in Japan

Companies in the petrochemical and energy sector in Japan, Colombia and Norway

Private and public research institutes in Japan, Colombia, Greece and Norway

### Expertise

Disaster risk management; Natech (Natural hazard-triggered Technological) accidents; Risk communication; Hydrogen safety; Participatory decision-making; Disaster preparedness; Community risk perception; Technology acceptance; Serious gaming; Spatial and land-use planning

### Relevant projects

#### **SUSHY Project:**

SuSustainability and cost-reduction of Hydrogen stations through risk-based, multidisciplinary approaches (European-Japanese consortium) [ongoing]



# Ivan Depina

Department of Civil and Environmental Engineering  
Faculty of Engineering

## Contact information

ivan.depina@ntnu.no  
+47 40389387

## Relevant links outside academia

Public sectors - road and railway authorities, meteorological institute, national warning services for landslides and flood

Industry - contacts in research organizations and institutes

## Expertise

Natural hazards, geological hazards, critical infrastructure development and management, climate change, resilience, geotechnical engineering, water-induced landslides, quantification of effects of climate change, risk analysis, risk-based decision-making, digitalization, monitoring, IoT

## Relevant projects

SFI Klima 2050 - societal risks associated with climate changes and enhanced precipitation and flood water exposure within the built environment.

KlimaDigital - use of IoT technologies to develop monitoring solutions for water induced landslides

CRES - climate resilient infrastructure





## Mohammadreza Aghaei

Department of Ocean Operations and Civil Engineering  
Faculty of Engineering

### Contact information

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### Relevant links outside academia

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Solar PV industries, Smart  
Buildings, Aerial Monitoring,  
Unmanned Aerial Vehicle,  
Internet of Thing, Artificial  
Intelligence.

### Expertise

**Energy:** Energy Systems, Energy Flexibility, Energy Building, Smart building,  
Smart Grid, Demand/Supply Side Management.

**Renewable Energy:** Renewable Energy Integration, Solar Photovoltaic Energy,  
Solar Cells, Photovoltaic Module/Component/System, Photovoltaic Power  
Plant, Integrated Photovoltaics (BiPV, ViPV, LSCPV, Floating PV, Agrivoltaic),  
Reliability and Durability of Photovoltaics. Autonomous Monitoring and  
Analysis: Autonomous Aerial Monitoring, Autonomous Faults Detection,  
Autonomous Control and Monitoring Systems, Autonomous Remote Sensing.  
Enabling Technologies: Unmanned Aerial Vehicle (UAV), Artificial Intelligence  
(AI), Deep/Machine Learning, Digital Twin (DT), Big Data Analysis (BDA),  
Internet of Thing (IoT), Satellite Data. Photonics: Luminescent Solar  
Concentrator, Optical Materials, Ray Tracing.

### Relevant projects

- Experiences in several national and EU-funded projects:
- COLLECTiEF – Collective Intelligence for Energy Flexibility.  
Role: Coordinator
- Performance and Reliability of Photovoltaic Systems:  
Evaluations of Large-scale Monitoring Data (PEARL PV)  
Role: WG chair/WG vice-chair/Core group member/  
Member of committee
- SOLAB - Outdoor Test Field for Solar Energy Research  
Role: Project manager
- Autonomous and Intelligent Monitoring Based on  
UAV and IoT Platform for Large-Scale PV Plants  
(AimPV) Role: Coordinator/Project manager
- The Research Center for Sustainable Solar Cell  
Technology (SUSOLTECH)
- Energy Systems Integration (ESI)
- MyCIGS collaborative research project –  
improving copper-indium-gallium-sulphide (CIGS)  
thin-film production



## 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

Industry and research  
institution

### Expertise

IoT, Embedded system, Renewable  
Energy, smartgrid, Cybe Security

### Expertise specific to this call:

Testing, technology development and  
assessment, techno-economic modelling

### Relevant projects

Energy and cyber security



# Yin Shen

Department of Mechanical and Industrial Engineering  
Faculty of Engineering

## Contact information

yin.shen@ntnu.no

## Relevant links outside academia

DNV

## Relevant projects

**2022-2026:** RELIASYS: Norway-South-Korea-Brazil-China-USA partnership for Cyber Physical Sustainability, funded by the Norwegian Directorate for Higher Education and Skills, PI.

**2022-2023:** Towards safety and security of autonomous systems against cyber0physical attacks, funded by SUBPRO Centre for Research-based Innovation (SFI) within subsea production and processing, PI.

**2023-2026:** Integrated safety and security design for autonomous systems against cyber-physical attacks, funded by Enabling Technologies, NTNU, PI.

## Expertise

- Fault diagnosis/prognosis and fault-tolerance
- Reliability, safety, and security
- System and control theory
- Data-driven monitoring and optimization
- Machine learning and computer vision
- Applications on health diagnosis and cyber-physical systems

**2022-2025:** Reinforcement Learning to Improve Maintenance Strategies, funded by MTP, NTNU, PI.

**2021-2024:** Digital twin qualification for maintenance, funded by SUBPRO Centre for Research-based Innovation (SFI) within subsea production and processing, PI.

**2020-2023:** The digital transformation and data-driven methods in the reliability of safety systems, funded by SUBPRO Centre for Research-based Innovation (SFI) within subsea production and processing, PI.



# 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 European countries; surface pretreatment industries); 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/hydration, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.)
- 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.



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Faculty of Engineering

## Contact information

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+47 40389387

## Relevant links outside academia

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Industry - contacts in research organizations and institutes

## Expertise

Natural hazards, geological hazards, critical infrastructure development and management, climate change, resilience, geotechnical engineering, water-induced landslides, quantification of effects of climate change, risk analysis, risk-based decision-making, digitalization, monitoring, IoT

## Relevant projects

SFI Klima 2050 - societal risks associated with climate changes and enhanced precipitation and flood water exposure within the built environment.

KlimaDigital - use of IoT technologies to develop monitoring solutions for water induced landslides

CRES - climate resilient infrastructure



## RESEARCHERS



# Destination 4: Increased Cybersecurity

Here you can find potential NTNU professors and employees that are interested in collaborations on destination 4.

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# DESTINATION 4 - CALLS

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Click on the call to be directed to its page

## **Call - Increased Cybersecurity 2024**

CS01 - Systems Security and Security Lifetime Management, Secure Platforms, Digital Infrastructures

[HORIZON-CL3-2024-CS-01-01: Approaches and tools for security in software and hardware development and assessment](#)

CS02 - Cryptography

HORIZON-CL3-2024-CS-01-02: Post-quantum cryptography transition



## Arvind Sharma

Department of Information security and Communication  
Technology

Faculty of Information Technology and Electrical Engineering

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arvind.sharma@ntnu.no  
+47 46710948

### Relevant links outside academia

Industry and research  
institution

### Expertise

IoT, Embedded system, Renewable  
Energy, smartgrid, Cybe Security

### Expertise specific to this call:

Testing, technology development and  
assessment, techno-economic modelling

### Relevant projects

Energy and cyber security



## RESEARCHERS



# Destination 5:

## Disaster-Resilient Society for Europe

Here you can find potential NTNU professors and employees that are interested in collaborations on destination 5.

The following pages are sorted into the calls for the destination presented in the work programme for cluster 3. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

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# DESTINATION 5 - CALLS

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Click on the call to be directed to its page

## Call - Disaster-Resilient Society 2024

DRS02 - Improved Disaster Risk Management and Governance

[HORIZON-CL3-2024-DRS-01-01: Prevention, detection, response and mitigation of chemical, biological and radiological threats to agricultural production, feed and food processing, distribution and consumption](#)

DRS03 - Improved harmonisation and/or standardisation in the area of crisis management and CBRN-E

[HORIZON-CL3-2024-DRS-01-02: Harmonised / Standard protocols for the implementation of alert and impact forecasting systems as well as transnational emergency management in the areas of high-impact weather/ climatic and geological disasters](#)

DRS04 - Strengthened capacities of first and second responders

[HORIZON-CL3-2024-DRS-01-03: Hi-tech capacities for crisis response and recovery after a natural-technological \(NaTech\) disaster](#)

[HORIZON-CL3-2024-DRS-01-04: Cost-effective sustainable technologies and crisis management strategies for RN large-scale protection of population and infrastructures after a nuclear blast or nuclear facility incident](#)



## Andreas Erbe

Department of Materials Science and Engineering  
Faculty of Natural Science

### Contact information

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+47 73594048

### Relevant links outside academia

Many industry partners  
(metal-producing industries in Norway and other European countries; surface pretreatment industries);  
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/hydration, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.)
- 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.



## Dimitrios Tzioutzios

Department of Mechanical and Industrial Engineering  
Faculty of Engineering

### Contact information

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### Relevant link outside academia

Local government organisations in Japan, Colombia and Greece

First responder associations in Japan

Companies in the petrochemical and energy sector in Japan, Colombia and Norway

Private and public research institutes in Japan, Colombia, Greece and Norway

### Expertise

Disaster risk management; Natech (Natural hazard-triggered Technological) accidents; Risk communication; Hydrogen safety; Participatory decision-making; Disaster preparedness; Community risk perception; Technology acceptance; Serious gaming; Spatial and land-use planning

### Relevant projects

**SUSHY Project:**  
SuSustainability and cost-reduction of Hydrogen stations through risk-based, multidisciplinary approaches (European-Japanese consortium) [ongoing]





## Dimitrios Tzioutzios

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### Relevant link outside academia

Local government organisations  
in Japan, Colombia and Greece

First responder associations in  
Japan

Companies in the petrochemical  
and energy sector in Japan,  
Colombia and Norway

Private and public research  
institutes in Japan, Colombia,  
Greece and Norway

### Expertise

Disaster risk management; Natech  
(Natural hazard-triggered Technological)  
accidents; Risk communication; Hydrogen  
safety; Participatory decision-making;  
Disaster preparedness; Community risk  
perception; Technology acceptance;  
Serious gaming; Spatial and land-use  
planning

### Relevant projects

#### **SUSHY Project:**

SuSustainability and cost-reduction of  
Hydrogen stations through risk-  
based, multidisciplinary approaches  
(European-Japanese consortium)  
[ongoing]



# Dimitrios Tzioutzios

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## Relevant link outside academia

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Companies in the petrochemical  
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Colombia and Norway

Private and public research  
institutes in Japan, Colombia,  
Greece and Norway

## Expertise

Disaster risk management; Natech  
(Natural hazard-triggered Technological)  
accidents; Risk communication; Hydrogen  
safety; Participatory decision-making;  
Disaster preparedness; Community risk  
perception; Technology acceptance;  
Serious gaming; Spatial and land-use  
planning

## Relevant projects

### SUSHY Project:

SuSustainability and cost-reduction of  
Hydrogen stations through risk-  
based, multidisciplinary approaches  
(European-Japanese consortium)  
[ongoing]



## Andreas Erbe

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Faculty of Natural Science

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+47 73594048

### Relevant links outside academia

Many industry partners  
(metal-producing industries in  
Norway and other European  
countries; surface  
pretreatment industries);  
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/hydration, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.)
- 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.



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### Relevant link outside academia

Local government organisations  
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First responder associations in  
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Companies in the petrochemical  
and energy sector in Japan,  
Colombia and Norway

Private and public research  
institutes in Japan, Colombia,  
Greece and Norway

### Expertise

Disaster risk management; Natech  
(Natural hazard-triggered Technological)  
accidents; Risk communication; Hydrogen  
safety; Participatory decision-making;  
Disaster preparedness; Community risk  
perception; Technology acceptance;  
Serious gaming; Spatial and land-use  
planning

### Relevant projects

**SUSHY Project:**  
SuSustainability and cost-reduction of  
Hydrogen stations through risk-  
based, multidisciplinary approaches  
(European-Japanese consortium)  
[ongoing]



## RESEARCHERS



# Destination 6:

## Strengthened Security Research and Innovation

Here you can find potential NTNU professors and employees that are interested in collaborations on destination 6.

The following pages are sorted into the calls for the destination presented in the work programme for cluster 3. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

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# DESTINATION 6 - CALLS

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Click on the call to be directed to its page

## **Call - Support to Security Research and Innovation 2024**

SSRI 02 – Increased innovation uptake

[HORIZON-CL3-2024-SSRI-01-01: Demand-led innovation through public procurement](#)

[HORIZON-CL3-2024-SSRI-01-02: Accelerating uptake through open proposals for advanced SME innovation](#)



## Katja Levy

Department of Sociology and Political Science  
Faculty of Social and Educational Science

### Contact information

catherine.r.levy

### Relevant links outside academia

5 years work experience in the German Bundestag (as research assistant to Vice President)

4 years work experience with Siemens Shanghai; several think tanks on China and Asia; Green Party Germany; several charitable foundations in China

### Expertise

Foreign policy analysis of China

Social policy analysis of China;

Comparative politics perspectives on China

### Relevant projects

**Social** Functions of Charitable Foundations in China

**Policy** dialogues between European countries and China

**Collaborative** efforts of social service provision in Germany and China

**Volunteering** in the UK and China





## Govert Valkenburg

Department of Interdisciplinary Studies of Culture  
Faculty of Humanities

### Contact information

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+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).



# Knowledge for a better world

PROPOSED BY  
**NTNU BRUSSELS OFFICE**  
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SCIENCE AND TECHNOLOGY, IE  
FACULTY**

PAGE 1/7/10/11: **GEIR MOGEN**

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