



UiO  **Centre for Technology, Innovation and Culture**
University of Oslo

ANNUAL REPORT 2021



TIK Centre for Technology – annual report 2021

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Letter from the Director

The year 2021 was the second year marked by the worldwide corona crisis. For several months, covid-related restrictions continued to affect the University of Oslo, alongside other public organizations and private companies throughout the world. As for TIK, these restrictions hampered a variety of working activities, both in research and education, thus creating uncertainty and severely affecting staff and students.

2021 was also the year in which TIK (and other Departments of the Faculty) had to move out of its headquarter at the Faculty of Social Sciences at Blindern, because the building *Eilert Sundts hus* had to be entirely renovated. In the spring 2021, TIK moved in its new temporary premises at Ullevål, where it will stay approximately until the end of 2022. Although the renovation process of *Eilert Sundts hus* building was necessary, and it had been discussed and planned by UiO for many years, it was somewhat unfortunate that this process had to be undertaken at the same time as the ongoing corona pandemics, which imposed restrictions to the regular use of offices for large parts of the year. The combination of moving out, moving in and covid restrictions hampered daily working activities and contributed to create uncertainty and logistical issues for the staff.

A major activity in 2021 was related to the so-called ARK survey, which the Faculty wanted all its Departments and Centres to undertake for the first time. ARK is a survey of the working environment that is coordinated nationally by NTNU and carried out periodically by all research organizations in Norway. TIK undertook this survey during the fall 2021 for the first time, and the participation from the staff was active and engaged.

In spite of the peculiar and difficult time at which the survey was undertaken (right in the middle of a pandemic and a moving out process), TIK' staff provided overall a positive feedback, indicating that the Centre has a nice and well-functioning working environment. The staff also indicated some aspects that may be improved in order to strengthen further TIK's working and social environment. We had several staff meetings to discuss these aspects, and an internal working group is currently developing a plan noting a set of measures/activities that TIK will implement in order to consolidate and strengthen its working environment.

Last but not least, another major achievement this year that it is worth highlighting relates to TIK's Master programs. UiO decided to grant ten additional students per year ("*studieplasser*") to the Master programs coordinated by TIK (five to the TIK and five to the ESST Master). This is something that our Centre aimed at, and had been asking for, for several years already. We are thrilled that we got this opportunity to slightly expand our Master programs now, and hope this to be a first step in the direction of expanding TIK's educational activities further during the coming years.



Fulvio Castellacci, Director

TIK – Facts and figures

The TIK Centre at the University of Oslo was established by the senate (now the University Board) as an independent unit organised under the Faculty of Social Sciences in 1999. This unit was a merge of the former Centre for Technology and Human Values (TMV), the interdisciplinary “European master program in Society, Science and Technology” (ESST) and the *Prosjektforum* (project forum, which is no longer a part of the Centre).

The TIK Centre carries out high quality research, education and research communication in the cross-disciplinary fields of innovation and science and technology studies.

Overview of TIK:

Scientific publications (2021)	30
Master programmes	2
Courses (Masters and Ph. D. courses)	10
PhD-students (per 31.12.2021)	28
Scientific man years (2021 - numbers from DBH, including Centre Director)	31
Administrative man years (2021 - numbers from DBH)	4
Total number of man years (2021 - numbers from DBH)	35
Budget (2021)	44 million NOK
Percent of the budget that is financed by external grants (2021)	70 %
Research projects with external financing (2021)	24

Staff changes at TIK

In spite of the continued corona situation, TIK welcomed several new staff. Quite a few of them started directly at home offices.

3 new ph.d students started in 2021: Gro Stueland Skorpen, at the RCN project “Evaluation Optics of the Nation State: The Past, Present and Future of Public Documentation” led by Hilde Reinertsen, and Stine Engen and Marie Stilling, both at the RCN project “ValueThreads: Tracing the economy as technology and culture in an emergent value-economy”, led by Kristin Asdal.

Tone Druglitrø started as full time researcher at the RCN project ResBod, Resisting bodies: The politics and practices of the immune system.

Lars Coenen joined Intransit as professor II and Chantale Tippet started as a researcher at TIK.

As for the administrative staff Helena Seibicke started as research adviser and Syed Misam Hussain and Ingrid Osen Lien worked as deputy student advisers.

In addition to contract extensions in 2020 due to the corona situation, 3 more extensions were granted ph.d. fellows in 2021.

In April 2021 the TIK staff moved office to temporary premises at Ullevål stadion as the Eilert Sundt’s Building is being renovated during 2021-2022. The move was conducted under corona restrictions and the staff made a considerable effort in packing down and out their offices. The temporary offices were not regularly in use due to the corona situation in 2021.

Organization

TIK’s current board period is 2020-2023 (with 1 year’s mandate for the temporary academic staff and students). In 2021 the members of the Board were the following:

- Professor Tore Nilssen, Vice Dean for Research and Chair of the board
- Professor Cathrine Holst, Deputy Chair of the board
- Senior researcher Hege Westskog, External member of the board
- Head of Department Thomas Hoholm, External member of the board
- Professor Magnus Gulbrandsen, Permanent academic staff at TIK
- Associate professor Tone Druglitrø/from November 2021 Post doctor fellow Silje M. Tellmann, Temporary academic staff at TIK
- Research adviser Ingrid Helene Johnsen, Administrative staff at TIK
- Student Sofie W. Ebeltoft, Student representative
- Student Jenny Kristiansen, Student representative

ARK survey

In 2021 the Faculty of Social Sciences conducted the ARK survey for the first time. ARK has a twofold aim:

- Development of psychosocial work environment at the workplaces
- Form a basis for research on work environment issues at knowledge intensive workplaces

TIK's employees participated in the survey and by the end of 2021 had identified thematic areas to be addressed by measures. The concrete measures are being developed in the first half of 2022.

Research

Research at the TIK Centre is organised in two research groups: the Science, Technology and Culture research group and the Innovation Studies research group.

TIK's researchers in the Science, Technology and Culture research group are mainly situated within the multidisciplinary field of Science & Technology Studies (STS) and focuses on the ways in which science and technology are shaped, become institutionalized and become involved in politics. Science and technology are viewed as cultural and material practices that can be fruitfully studied from both historical and contemporary perspectives.

The innovation group focuses on understanding the complex and dynamic relationships between the technological, economic and social factors that contribute to innovation in various firms, sectors, regions and countries. The point of departure for this work is that technological change and learning are important driving forces for societal change.

Both groups are active in international networks and initiatives, including the Peder Saether Centre in Berkeley, EU-SPRI and Nordic STS.

In addition to the two groups, climate and the energy transition is a cross-cutting theme at TIK, encompassing researchers from both groups.

Several researchers at TIK have applied for funding from a magnitude of programs and funding agencies, and predominantly the Research Council of Norway. TIK's role is either as project coordinator or as partner in projects hosted by other institutions. Following national and university strategic decisions, TIK has also applied and participated in EU-funded research through the Horizon 2020 Research Program. In 2021, TIK was involved in one project funded by the EU.

2 new projects started in 2021. TIK is partner in one RCN-founded project and hosts a project funded by the British foundation NESTA.

Research projects at TIK in 2021

PROJECT	PROJECT LEADER	STARTING DATE	FUNDING
ReNewGrowth – Conditions for growth in renewable energy industries	Jens Hanson	01-aug-2017	RCN - ENERGIX
ResPublica - Responsibility, practices and the public goods across Digital Life	Ana Delgado Aleman	01-okt-2017	RCN – BIOTEK2021 via NTNU
SuSolTech - Research Centre for Sustainable Solar Cell Technology	Olav Wicken	01-jun-2017	RCN – FME via Institutt for Energiteknikk/ UiO:Energi
OSIRIS	Magnus Gulbrandsen	01-mai-2016	RCN – FORINNPOL NAV
TEMPEST	Fulvio Castellacci	01-des-2016	RCN - via TØI
HappyICT - Responsible Innovation and Happiness: A New Approach to the Effects of ICTs	Fulvio Castellacci	01-des-2015	RCN - SAMANSVAR
Measurement and Management of Innovation (Telenor)	Fulvio Castellacci	01-nov-2018	Telenor
GlobOil - The Norwegian oil and gas supply industry in hard times: innovation in global supply chains	Helge Ryggvik	01-jun-2018	RCN - PETROMAKS2
BioRoBoost - Fostering Synthetic Biology: standardisation through international collaboration	Ana Delgado	01-nov-2018	EU H2020
INTRANSIT	Taran Thune	01-jan-2019	NFR – FORINNPOL
Conflicting Transition Pathways for Deep Decarbonization	Allan Dahl Andersen	01-oct-2019	NFR – ENERGIX
BREAD - Building Responsibility and Developing Innovative Strategies for Tackling Food Waste	Julia Szulecka	01-sept-2019	NFR
NTRANS - Norwegian Centre for Energy Transition Strategies	Allan Dahl Andersen	01-aug-2019	RCN - FME - via NTNU
Bridging Boundaries	Susanne Bauer	01-may-2019	DIKU
ResBod - Resisting bodies: The politics and practices of the immune system	Tone Druglitrø	01-Feb-2020	RCN

ValueThreads: Tracing the economy as technology and culture in an emergent value-economy	Kristin Asdal	01-Dec 2020	RCN
Evaluation: Evaluation Optics of the Nation State: The Past, Present and Future of Public Documentation	Hilde Reinertsen	01-Dec-2020	RCN
Urbtrans: Urban Transformation in a Warming Arctic – The continued effects of Nordic colonialism in urban planning and development	Tone Huse	01-Oct-2020	RCN via Univ. of Tromsø
NorwAI - The Norwegian Research Center for AI Innovation	Susanne Bauer	01-Oct-2020	RCN-SFI via NTNU
Riggneringen. 50 år i grenselandet mellom menneskelig kapasitet, teknologi og natur	Helge Ryggvik	01-Dec-2020	Norsk Oljemuseum
STS Methods Lab	Susanne Bauer	01-Nov-2020	RCN - ISPSAM
Innovation, Welfare and Policy: Scientific development and renewal of TIK's research group in innovation studies	Fulvio Castellacci	30-Dec-2020	RCN – ISPSAM
Historicizing Intelligence Tests, metrics and the shaping of contemporary society	Susanne Bauer	01-Aug-2021	RCN via KHM/UiO
Beyond responsibility: integrating the ideal of moral imagination into research & innovation	Fulvio Castellacci	01-Sep-2021	NESTA foundation UK

In addition, in 2021 TIK had four PhD candidates through the RCN OFFPHD programme, and one NÆRINGSPHD, all organized as externally financed projects.

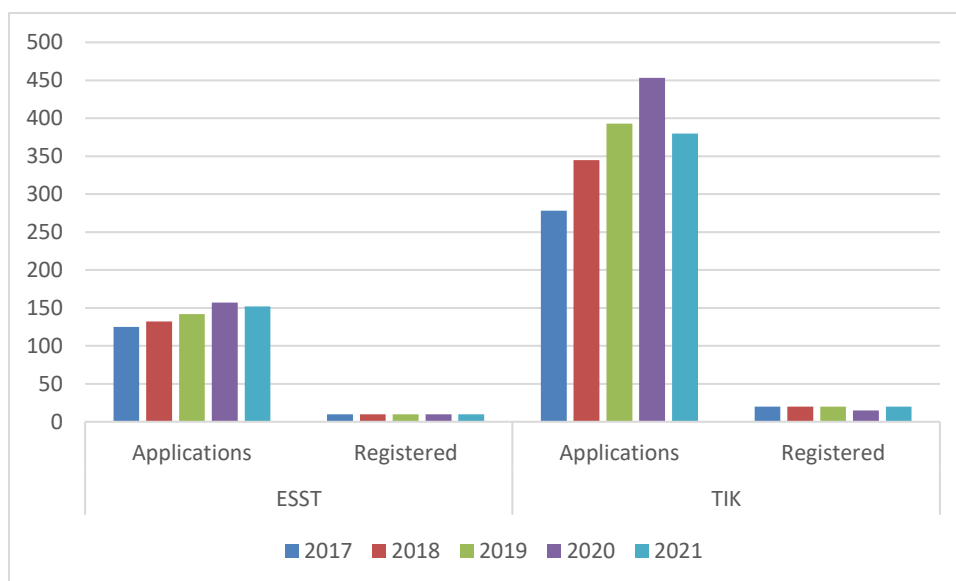
Education

Master programs

TIK offers two programmes at the master level:

- TIK - Technology, Innovation and Knowledge (2 years)
- ESST - Society, Science and Technology in Europe (1,5 years)

30 master students are admitted every year, 20 to the TIK and 10 to the ESST-program. Both programs have experienced a steady rise in applicants during the last five years.



Source: DBH

High quality of applicants

National students can apply to a maximum of three UiO programmes any given year at the master's level. Applicants must then rank the chosen programmes in a prioritized manner.

In 2015, around 100 of the applicants had TIK/ESST as their number one priority. In 2018 this number had increased to 171, and in 2021, the TIK and ESST masters had 198 first priority applicants. The highest number of applicants was recorded in 2020, with 222 first priority applicants for our programmes. The number for the TIK programme is particularly good, with 7,75 first priority applicants for each available place. On average this indicates that a high proportion of the applicants that apply to either the TIK or the ESST programme, put our programmes as their preferred choice.

The grade point average (GPA) of applicants has gradually risen in the 2010s, and from 2020 onwards, the applicants needed a GPA of no less than B or B+ in order to be admitted.

These developments are positive and expected to increase the quality of students that will enroll in TIK's Master programmes in the coming years.

Student magazine: Teknovatøren

Teknovatøren is since 2006 the TIK and ESST students' semi-scientific student magazine. It is partly financed by the TIK Centre.

Editions in 2021:

- #20: Truth Lies In Facts

2021 in short

- Degrees completed: 20 TIK, 5 ESST.

PhD – doctoral degree

TIK's doctoral track is one of the seven tracks of the doctoral programme that is offered by the Faculty of Social Sciences at UiO. TIK's track aims to provide both research training and a

broad base of advanced knowledge in theoretical and methodological approaches within science, technology and innovation studies.

Professor Susanne Bauer has been coordinator of TIK's PhD programme track during 2021.

Disputations

There was one disputation in 2021.

On 16 June Sveinung Grimsby defended his dissertation: Radical innovation in a conservative industry. Selected cases of new product development in the Norwegian food industry.

Candidates

TIK welcomed three new candidates during 2021, and had the following candidates enlisted in the program as of December 31st 2021.

In total TIK had 28 candidates enrolled in the TIK PhD program:

Candidate	PhD project	Supervisor(s)
Stine Engen	Accounts and other valuation tools: How valuation is changing (and resisting change) in the valueeconomy	Kristin Asdal
Tércio Pinho Filho	Actors recomposition in the O&G industry: a case study for adaptation and innovation from subsea suppliers	Helge Ryggvik
Jørgen Finstad	The transition dynamics of complex technologies – lessons from carbon capture and storage	Allan Andersen, Taran Thune
Cyriac George	Transition pathways in context: a socio-technical analysis of hydrogen fuel in the Norwegian transportation sector.	Olav Wicken
Bård Hobæk	Salmon Sustainabilities	Kristin Asdal
Alina Kontareva	Salvaging and Rebuilding in the Wreckage: Building an Innovative Ecosystem in Post-Soviet Countries	Fulvio Castellacci/ Biveileder UC Davies
Joar Kvamsås	The impact of research collaboration on innovation in firms and industries	Fulvio Castellacci/ Biveileder SSB
Bård Lappegård Lahn	Climate governance between global knowledge and national politics.	Kristin Asdal
Sylvia Lysgård	Hva dreier det seg om? Næringsliv, politikk og praksiser i to norske (miljø)saker.	Göran Sundqvist og Kristin Asdal
Tommas Måløy	Valuation in genomic databases: a case study on the Aqua Genome Project	Kristin Asdal
Helena Nynäs	Valuation of major waterfalls in modern Norway	Sissel Myklebust and Mari Hvattum
Kristin Oxley	Ukonvensjonell, tverrfaglig forskning: Hvordan legge til rette for gode søknadsbehandlingsprosesser	Magnus Gulbrandsen

Frauke Rohden	Tracing the impact of scientific research in online spaces	Magnus Gulbrandsen/ Biveileder Susanne Bauer
Erlend Osland Simensen	Mapping the supplier industry	Taran Thune
Kari-Elisabeth Vambeseth Skogen	The impact of research on policy: an empirical study of the use of scientific knowledge in policymaking in Norway	Taran Thune, Magnus Gulbrandsen, and mentor Geir Arnulf
Benjamin Smith	Transformative Research and Innovation Policy for Net-Zero	Taran Thune
Gro Stueland Skorpen	Audit and edit. An ethnography of evaluation documents in offices and online	Hilde Reinertsen, Antonia Walford
Eili Skrivervik	Innovation and technology transfer in field-development projects on Norway, Brazil and U.S. GoM	Taran Thune
Marie Stilling	Nourishing Weeds: Valuating Macroalgae Growth in an Emerging Economy	Kristin Asdal
Elisabeth M C Svennevik	Changes towards sustainable mobility: Experiences from car sharing in urban areas.	Olav Wicken, Tom Erik Julsrud (TØI)
Kasper Rogde Søyland	An Innovative Century? The origins for advanced aluminium prefabrication	Olav Wicken og Finn Ørstavik
Tina Naomi Talleraas	Unlocking the Black Box of Nuclear Disarmament: A case study of the Norwegian initiative to re-politicize the bomb	Göran Sundqvist
Hanne Castberg Tresselt	Praksiser og politikk knyttet til forskning på immunsystemet	Tone Druglitrø, Gail Davies
Irene Øvstebø Tvedten	Science and Corporate Policy – DNV GL as an enabler for a sustainable future"	Kristin Asdal /Susanne Bauer
Lars Wenaas	Open Access: En endring av forskningspubliseringen med begrenset rekkevidde?	Magnus Gulbrandsen
Kjersti Aalbu	Aligning shipping with the Paris Agreement: Expert knowledge, the IMO, and a decarbonised shipping industry in the making	Susanne Bauer/ to biveildere DNV-GL
Jørgen Aarhaug	How can digitalisation and transport innovations contribute to more efficient and sustainable passenger transport in urban agglomerations?	Olav Wicken og Ove Langeland
Sissel Småland Aasheim	The infrastructure of responsibility	Ana Delgado

PhD courses and seminars

TIK9101 Obligatory PhD seminars:

Spring: 7-8 June 2021, Zoom

Autumn: 16-17 November 2021

6-9 December 2021

This PhD course was the first of the courses organized by the STS Methods Lab within their aim of strengthen methods competencies by means of establishing and conducting a series of PhD courses on STS methodologies.

TIK is member of the Nordic Research School in Innovation and Entrepreneurship (NORSI) consortium, a research school for PhD students in the Nordic countries within the field of innovation and entrepreneurship. NORSI works to enhance and strengthen the Nordic innovation and entrepreneurship research education and community.

Research communication

Web

During 2021, the following research-based news articles were written for TIK's web page.

- “Pandemien har synliggjort forskningens usikkerhet”
Interview with Magnus Gulbrandsen, Silje Tellmann and Saidi Trust from the OSIRIS project for the blog “Verden med virus” (At TIK web, 263 page views after its publication in December. The article is still being read with 79 visits the last 60 days).
- “Vekslende politisk satsing på havvind: – Oljen fortsetter å være det viktigste markedet for våre høyteknologiske leverandørbedrifter”
Interview in the UiO magazine Apollon with Taran Thune on the INTRANSIT Centre's research on how the Norwegian economy can be made smarter and more sustainable through industrial transformation.

In addition to “Research News”, TIK webpages have three headlines that report on TIK researchers' communication activity: “News”, “Publications”, and “TIK i media” (only in Norwegian).

20 shorter news articles/notices were posted online, 17 publications were announced and 12 TIK in media was reported in 2021. The list does not cover all activity at TIK, and different research groups/projects/people seem to favour different types, or “lines” of communication and dissemination. This means that the numbers reflect a bias towards some researchers that get more publicity reported on the web page than others. There is no reason to believe that the visibility on the web page reflect degree of involvement in communication and dissemination.

Our web pages in English are viewed 357 times the last 30 days and our web pages in Norwegian are viewed 648 times the same period. This means that TIK produce content on the web that is read in both languages. Our employee's profile pages and our section on “Forskning” (in Norwegian) rank high regarding page views.

Blogs

TIK have two Blogs tied to different research projects that post with different frequency, and with different reach.

Social media

TIK has been on Twitter since 2012 and on Facebook since 2015, where we have published news, events, publications, available positions, TIK Talks, student information etc.

Our Facebook page mainly targeted potential applicants for the master and PhD programs, and alumni.

Seminars and workshops at TIK in 2021

Date	Speaker	Title
13.12. 2021	Kjersti Aalbu	PhD midway seminar: The politics of data in the decarbonization of international shipping
8.12.2021	Emily Martin (NYU) in conversation with evolutionary biologist Kjetill Jakobsen, and immunologists Shou-Wang Qiao and Finn-Eirik Johansen from the UiO: Life Science Convergence Environment COMPARE	STS Methods Lab: Resistant bodies - in science and culture: challenges, approaches, and concepts in immunology
25.11.2021	Bård Lahn	Final PhD seminar: On the shifting enactments of climate change as a political issue.
11.11.2021	Astrid Schrader, University of Exeter	STS Methods Lab: Reading Science - Caring with Haunted Microbes
14.10.2021	John Parker, ISS/UiO	STS Methods Lab: Sociometers and Sensibility: Using Sociometers to Study Scientific Collaboration
23.9.2021	Post doctor Vibeke Pihl	Conceptual and empirical mixtures in translational science on metabolic engineering of cells with the hope to enable a sustainable future
30.6.2021	Lars Wenaas	Final PhD Seminar: Open Access: a change in academic publishing with limited reach? An investigation of the effect of open access.
21.6.2021		Workshop for Young Researchers: "Platform Studies: The Emerging Research Field in Norway"

		Organized by PhD candidates Alina Kontareva and Jørgen Aarhaug
9.-11.6.2021		EU-SPRI 2021: Science and Innovation – an uneasy relationship? Organized by OSIRIS and INTRANSIT in collaboration with NIFU.
3.6.2021	Associate Professor Hannah Knox, Director of the UCL Centre for Digital Anthropology	STS methods lab: Encountering climate in Models and Materials
22.4.2021	Associate Professor of Anthropology (Research) in the Alfred Deakin Institute for Citizenship and Globalization at Deakin University, Eben Kirksey, Ph.D.	STS Methods Lab: Poaching in Multispecies Worlds
8.4.2021	Professor James Wilsdon (The University of Sheffield)	Innovation lunch: "Meta-science and meta-research: old wine in new bottles, or a cocktail for change?"
25.3.2021	Associate professor in environmental humanities and director of the Oslo School of Environmental Humanities, Ursula Münster	STS Methods Lab: Multispecies methods in political ecologies of conflict
25.3.2021	Frauke Rohden	PhD midway seminar: Exploring hyperlinking practices in informal science communication online
16.3.2021	Elisabeth Svennevik	PhD final seminar: Car-sharing practices in transitions to sustainable mobility
4.3.2021	Helge Jordheim	Temporalities as Methods
4.2.2021	Researcher Tuukka Mäkitie and Senior Researcher Markus	Grønn og smart omstilling i norske næringer Organized by Intransit

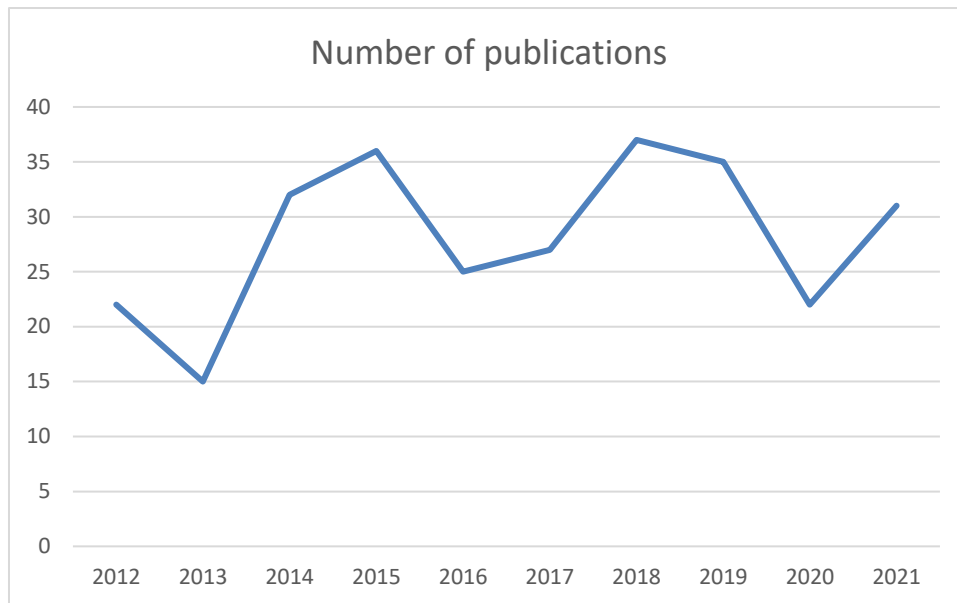
	Steen, both SINTEF Digital	
29.1.2021	Fulvio Castellacci, Henrik Schwabe, Erik Carlquist, Katrina Røen, Lin Prøitz, Joshua Phelps, Adrian Smith, Cian O'Donovan and Ed Steinmuller	Digitalization and users' well-being Digital workshop that mark the conclusion of TIK's research project on "ICTs and well-being"
28.1.2021	Per Botolf Maurseth, Dibyendu Maiti, Artur Santoalha, Chantale Tippet, Hildegunn Nordås, Hege Medin, Arne Melchior, Biswajit Nag	Digitalization, growth and international trade Digital workshop that mark the conclusion of TIK's research project on "ICTs and well-being"

TIK researchers are also active in external seminars as key speakers, part of panel discussions and other the list above does not reflect this.

Publications

A total of 31 publications were registered in the Cristin database in 2021. This is a significant increase from the previous year. The reduced publication activity is also a result of the fluctuations that are recognizable in the general publication pattern. Both junior and senior researchers continue to publish in prestigious journals in the fields of innovation studies and STS. 11 out of the 31 publications were published in level 2 publications.

The graph below shows TIKs number of scientific publications in the period 2010-2020:



Source: DBH/Cristin

The data regarding the publications points for 2021 is not yet available from the national registers. Publication points per academic man year will thus be reported on a later date.

Publications reported to the Norwegian Science Index (NVI) in 2021:

van der Loos, Adriaan; Normann, Håkon Endresen; Hanson, Jens; Hekkert, Marko P..

The co-evolution of innovation systems and context: Offshore wind in Norway and the Netherlands. *Renewable & Sustainable Energy Reviews* 2021 ;Volum 138.

Tsouri, Maria; Hanson, Jens; Normann, Håkon Endresen.

Does participation in knowledge networks facilitate market access in global innovation systems? The case of offshore wind. *Research Policy* 2021 ;Volum 50.(5)

Muhonen, Reetta; Tellmann, Silje Maria.

Challenges of reporting societal impacts for research evaluation purposes – case of sociology. I: *Research Assessment in the Social Sciences*. Edward Elgar Publishing 2021 ISBN 9781800372542.

Natera Marin, Jose Miguel; Castellacci, Fulvio.

Transformational complexity, systemic complexity and economic development. *Research Policy* 2021 ;Volum 50.(7)

Delgado, Ana; Åm, Heidrun.

Biologisk mangfold og selvråderett - hvorfor digitale genetiske data ikke er "den nye oljen". *Nytt Norsk Tidsskrift* 2021 ;Volum 38.(01-02) s.45-57

Bauer, Susanne.

"Dette nummeret vil følge deg gjennom livet ditt" - registre, datakobling og digital selvråderett. *Nytt Norsk Tidsskrift* 2021 ;Volum 38.(1-2) s.33-44

Bugge, Markus; Siddiq, Fazilat.

Empowering professionalism in mission-oriented innovation. *Science and Public Policy* 2021 ;Volum 48.(3) s.423-437

Delgado Aleman, Ana Maria; Pascual, Javier; Kristi, Tanner; Cristina, Villanova; Porcar, Manuel.

“The microbial terroir: open questions on the Nagoya protocol applied to microbial resources”.
Microbial Biotechnology 2021 ;Volum 14.(5) s.1878-1880

Forsberg, Ellen-Marie; Strøm-Andersen, Nhat; Bugge, Markus Michaelsen; Brekke, Andreas; Prestrud, Kjersti.

RRI and Value Chain Collaboration for Innovations Reducing Food Waste. I: *Proceedings on the 2021 ISPIM innovation conference : Innovating our common future*. ISPIM Lappeenranta University of Technology Press 2021 ISBN 9789523354678.

Lindberg, Marie Byskov; Kammermann, Lorenz.

Advocacy coalitions in the acceleration phase of the European energy transition. *Environmental Innovation and Societal Transitions* 2021 ;Volum 40. s.262-282

Szulecka, Julia; Strøm-Andersen, Nhat.

Norway's Food Waste Reduction Governance: From Industry Self-Regulation to Governmental Regulation?. *Scandinavian Political Studies* 2021 s.1-24

Normann, Håkon Endresen; Tellmann, Silje Maria.

Trade unions' interpretation of a just transition in a fossil fuel economy. *Environmental Innovation and Societal Transitions* 2021 ;Volum 40. s.421- 434

Delgado, Ana.

Microbial Extractions: Sequence-based Bioprospecting, Augmented Promises and Elusive Politics. *Science, Technology and Human Values* 2021.

Bugge, Markus Michaelsen; Andersen, Allan Dahl; Steen, Markus.

The role of regional innovation systems in mission-oriented innovation policy: exploring the problem-solution space in electrification of maritime transport. *European Planning Studies* 2021

Newey, Lance R.; Coenen, Lars.

Lock-in, paradox and regional renewal. *Regional studies* 2021.

Santoalha, Artur; Consoli, Davide Francesco; Castellacci, Fulvio.

Digital skills, relatedness and green diversification: A study of European regions. *Research Policy* 2021.

Scordato, Lisa; Bugge, Markus Michaelsen; Hansen, Teis; Tanner, Anne; Wicken, Olav.

Walking the talk? Innovation policy approaches to unleash the transformative potentials of the Nordic bioeconomy. *Science and Public Policy* 2021. s.1-23

Saidi, Trust; Douglas, Tania S..

Critical elements in the design, development and use of medical devices. A systemic perspective of orthopedic devices landscape in low- and middle-income countries. *Health Policy and Technology* 2021 ;Volum 00:100593. s.1-6

Gulbrandsen, Magnus; Høiland, Gry Cecilie Lunder.

The relationship between research and innovation in the public sector – an analysis of five cases from labour and welfare services. *Nordic Journal of Social Research* 2021 ;Volum 12. s.46-69

Santos, Patricia; Thune, Taran Mari.

Social capital and university–business collaboration in doctoral education. *Industry & higher education* 2021 s.1-13

Rohden, Frauke Gerdes.

Experts, influencers, and amplifiers — Exploring climate movements' hyperlinking practices. *JCOM - Journal of Science Communication* 2021.

Kasperowski, Dick; Hagen, Niclas; Rohden, Frauke Gerdes.

Ethical boundary work in citizen science. *Nordic Journal of Science and Technology Studies* 2021.

Svennevik, Elisabeth M.C..

Providers and practices: How suppliers shape car-sharing practices. *Sustainability* 2021 ;Volum 13.(4) s.1-14

Fagerberg, Jan; Verspagen, Bart.

Technological Revolutions, Structural Change, and Catching up. I: *New perspectives on structural change : Causes and consequences of structural change in the global economy*. Oxford University Press 2021 ISBN 9780198850113.

Christensen, Jesper Lindgaard; Fagerberg, Jan.

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