



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

ANNUAL REPORT 2020



TIK Centre for Technology – annual report 2020

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Letter from the Director

The year 2020 marked an unexpected and unprecedented worldwide crisis related to the coronavirus (covid-19) pandemic. During the first months of 2020, the virus began to spread rapidly across the globe, threatening people's health and putting national health infrastructures and services under severe pressure. To contain the spread of the coronavirus, many countries adopted strict emergency measures that were meant to limit physical contact and virus transmission among persons.

In line with most other European countries, Norway adopted strict emergency measures too, and it entered a lockdown in mid-March 2020. As most other public and private organizations throughout the country, the University of Oslo had to close its campus for several weeks during the spring semester, and then again for several more weeks during the fall. UiO's employees and students were thus forced to work from home for most of the year.

As everybody else, employees and students at the TIK Centre were heavily affected by the pandemic and the related emergency measures. Working from home was challenging, particularly for those that did not have sufficiently good office space and infrastructures at home, and for those that had to take care of their kids when the schools were closed. All working activities and events were severely affected and had to be cancelled, postponed, or modified. The general situation of uncertainty was a heavy burden for all, and it substantially affected our working time, energy and mood.

“At night, especially, it is beautiful to believe in the light” (Plato).

In such a difficult period, though, TIK's employees' strength and dedication were remarkable. In spite of the closed campus, improvised home offices and uncertainty about the future, TIK managed to continue most of its core activities using digital means to overcome the restrictions to physical contact. For instance, most PhD activities and support services (courses, seminars, supervision) were offered online starting from the spring 2020. In April, TIK hosted the first digital PhD defence ever held at the Faculty of Social Sciences; and five more PhD thesis were successfully defended online later during the year.

Shifting from a physical to a digital format was not easy, and it demanded active effort and planning. TIK's Master level courses were also offered digitally during the spring semester, and as a hybrid mode (digital / physical) during the fall. The Centre's scientific and administrative personnel engaged in educational activities showed remarkable resilience and willingness to develop new skills and “go digital”.

The digital format had also to be used for all other working activities. A new TIK's Board began at the beginning of the year, holding most of its meetings in a video format. A brand-new administration team also began during the year, without having the possibility to personally meet the staff for several months. Ongoing project activities continued at intense pace, in spite of the necessary postponement of planned activities (e.g. international workshops and conferences). New research project applications were submitted to the Research Council of Norway and other funding agencies.

At the end of a very challenging and cumbersome year 2020, the TIK Centre acknowledges the extraordinary effort and enthusiasm demonstrated by all employees.



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 (2020)	22
Master programmes	2
Courses (Masters and Ph. D. courses)	10
PhD-students (per 31.12.2020)	35
Scientific man years (2020 - numbers from DBH, including Centre Director)	34,25
Administrative man years (2020 - numbers from DBH)	6*
Total number of man years (2020 - numbers from DBH)	40,25
Budget (2020)	37,3 million NOK
Percent of the budget that is financed by external grants (2020)	67 %
Research projects with external financing (2020)	28

* Includes two employees on leave and their substitutes.

Staff changes at TIK

In spite of the corona situation, TIK welcomed several new staff, mostly in the different research projects. Quite a few of them started directly at home offices.

2020 was also the last year as employee of one of the TIK veterans: Professor Olav Wicken retired in the autumn semester.

Jørgen Finstad joined the INTRANSIT team as ph.d. fellow in the beginning of 2020. The project also welcomed Artur Santoalha and Jakoba Gonzalez as post doctor fellows. Jakoba Gonzalez is also part of the NRANS project. Erlend O. Simensen holds a researcher position at OSIRIS whereas Hilde Nykamp started as a post doctor fellow at the Pathways project in the autumn semester. Also a post doctor fellow, Nhat Strøm-Andersen joined the BREAD project in the end of 2020. Hanne Tresselt started her ph.d. fellowship in the ResBod project in October. After finishing her engagement for the Little Tools project, Hilde Reinertsen started as researcher in the Evlunation-project in December. Tone Huse holds from October 2020 a 10 % associate professorship at the project URBTRANS.

6 ph.d.fellows was given extension of their contracts due to the corona situation.

As for the administrative staff, the new head of administration, Inger-Johanne Ullern, began at TIK in March. Both in the research and the study administration there were several deputies. Before Ingrid Helene Johnsen joined TIK as research adviser in May, Ingvild Bergom Lunde worked on research administration. When Stine Bruland left the centre later in the year, Emil Bæk Holland was her deputy. TIK had three deputy student advisors from May on, Karl Bambini, Camilla Flatøy and Marie Sørhaug.

Organization

A new board period started in 2020. For the years 2020-2023 (with 1 year's mandate for the temporary academic staff and students) the Board of the Faculty of Social Sciences has approved of the following composition:

- 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, 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

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.

2020 saw the follow up of the national evaluation of the social sciences (SAMEVAL). Both research groups were granted funding from the RCN for further developing researcher training and networks.

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 2020, TIK was involved in two projects funded by the EU.

Four RCN financed projects started in 2020. Value-Threads is a Researcher Project funded by the FRIPRO programme and chaired by Kristin Asdal. The STS group also secured to Researcher Project for Young Talents: "ResBod: Resisting bodies: The politics and practices of the immune system", led by Tone Druglitrø and "Evaluation Optics of the Nation State: The Past, Present and Future of Public Documentation (EVALUNATION)", led by Hilde Reinertsen. The fourth project, The Continued Effects of Nordic Colonialism in Urban Development and Planning (URBTRANS), led by Tone Huse, was applied for from TIK but is being led from University of Tromsø – The Norwegian Arctic University. TIK continues as a partner in this project.

2020 was formally the last year of Kristin Asdal's ERC Starting grant project Little Tools, although publications, reporting and other finalizing activities will be forthcoming in 2021.

Research projects at TIK in 2020

PROJECT	PROJECT LEADER	STARTING DATE	FUNDING
ReDig - Responsibility as an Integral Component of Digital Research Practices in Bio- and Nanotechnology	Ana Delgado Aleman	01-mai-2017	RCN – BIOTEK2021
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
Greenfleet – Greening the Fleet – Sustainability Transitions in the Maritime Shipping Sector	Jens Hanson	01-mar-2017	RCN – ENERGIX via SINTEF
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
ERC StG Little Tools Enacting the Good Economy: Biocapitalization and the little tools of valuation	Kristin Asdal	01-aug-2015	EU Horizon 2020 - European Research Council Starting Grant
SusValueWaste - Sustainable path creation for innovative value chains for organic waste products	Fulvio Castellacci	01-jun-2015	RCN - BIONÆR - via NIFU
GlobOil	Helge Ryggvik	01-jun-2018	RCN - PETROMAKS2
BioRoBoost	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	Tone Druglitrø	01-Feb-2020	RCN
ValueThreads	Kristin Asdal	01-Dec 2020	RCN
Evalunation	Hilde Reinertsen	01-Dec-2020	RCN
Urbtrans	Tone Huse	01-Oct-2020	RCN via Univ. of Tromsø
NorwAI	Susanne Bauer	01-Oct-2020	RCN via NTNU

In addition, in 2019 TIK had three PhD candidates through the RCN OFFPHD programme, and two NÆRINGSPHD, all organized as externally financed projects.

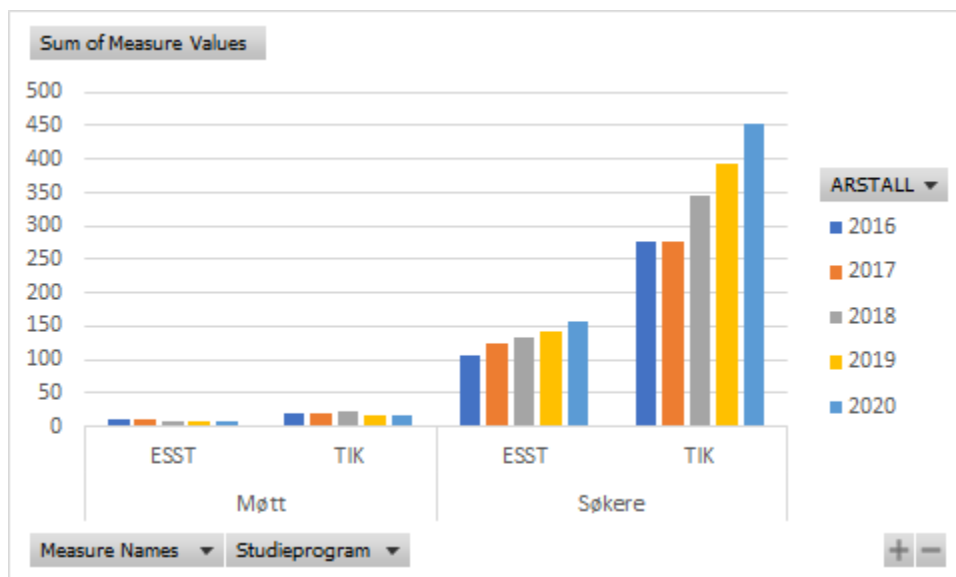
Education

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. 2019 and 2020 marked a decline in the number of students accepting the admittance to the programs (15 at TIK, 9 at ESST), and TIK will take measures to prevent this happening in the future.



Source: UiO Tableau-studier

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 2019, the TIK and ESST masters had 222 first priority applicants. The number for the TIK programme is particularly good, with 9 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 in 2020, 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 satisfaction

Studiebarometeret.no is a web portal made by NOKUT, which measures students' satisfaction with their study programme.

For 2020 the results were published together with / added to the results from 2019 due to a low rate of answers. The total number of respondents for the two years together was 15 for the TIK programme and 10 for the ESST programme. The ESST programme received slightly more favourable reviews than the TIK programme, while the last years the opposite has been the case. Students on both programmes are generally happy with their programme. The ESST-students' reviews are most favourable on the indexes for teaching and inspiration. These indexes deal with how interesting and engaging the programme is, as well as how much effort is expected from the students themselves. Both programmes have a rather low rate of answers, and we are working on attaining a higher response rate for future evaluations.

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 2020:

- #19: Covid-19 and "The new normal"

2020 in short

- Degrees completed: 20 TIK, 10 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 the spring semester of 2020. Fulvio Castellacci took over the role as coordinator during the fall semester while Susanne Bauer was on sabbatical.

Disputations

There were six disputation in 2020. Five out of six disputations were organized digitally due to the pandemic.

On 16 January Simen Enger defended his thesis *The Factors Behind Participation: Evidence from the European Framework Programme, Horizon 2020*.

On 30 March Artur Santoalha defended his thesis *Technological Diversification in European Regions: Patterns and Determinants*.

On 21 April Bianca Cavicchi defended her thesis *The effects of Feedback Dynamics on Sustainability Transitions Policies: the case of Bioenergy*.

On 4 November Nhat Strøm-Andersen defended her thesis *Incumbent firms in the transition toward the bioeconomy: Capabilities, strategies, and governance for by-product and waste valorization in the food processing industry*

On 10 December Marie Byskov Linberg defended her thesis *Currents of Change Actors, policies and market design in an advancing energy transition*.

And on 18 December Henrik Shwabe defended his thesis *Essays on ICTs, Expectations and Subjective Well-being*.

Candidates

TIK welcomed three new candidates during 2020, and had the following candidates enlisted in the program as of December 31st 2020.

In total TIK had 33 candidates enrolled in the TIK PhD program:

Candidate	PhD project	Supervisor(s)
Jørgen Finstad	The transition dynamics of complex technologies – lessons from carbon capture and storage	Allan Andersen, Taran Thune
Morten Fosaas	Innovation Systems and Innovation Policy: Perspectives and Challenges	Jan Fagerberg og Anna Bergek
Sveinung Grimsby	How does the Norwegian food industry act during innovation processes? A study on new product failure rate and systematic differences between successful and unsuccessful innovation projects in the food industry.	Magnus Gulbrandsen and Cathrine Finne Kure
Bård Hobæk	Salmon Sustainabilities	Kristin Asdal
Ásdis Jónsdóttir	Climate change, ecology and knowledge in Iceland: An anthropological study.	Tian Sørhaug and Gisli Palsson
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
Turid Markussen	Antropologi i nord	John Law
Tuukka Mäkitie	Function-interactions in innovation processes: the technological innovation system of petroleum industry	Taran Thune

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
Erlend Osland Simensen	Mapping the supplier industry	Taran Thune
Kristin Oxley	Ukonvensjonell, tverrfaglig forskning: Hvordan legge til rette for gode søknadsbehandlingsprosesser	Magnus Gulbrandsen
Guro Ådnegard Skarstad	New Fish in a New Environment: Challenges to a Comprehensive Management of Fish, Environments and Human Beings.	Kristin Asdal
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
Hege Rudi Standal	Universities as Strategic Actors- University management and the new era of Governance.	Magnus Gulbrandsen og Merle Jacob
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
Cyriac George	Transition pathways in context: a socio-technical analysis of hydrogen fuel in the Norwegian transportation sector.	Olav Wicken
Gard Neverlien	Public Procurement and Innovation in Helthcare: An analysis of pharmaceutical procurement in Norway, reviewing current rules, regulations and practices, and developing principles and methodology for next generation frameworks.	Fulvio Castellacci/ to biveiledere NOFAS

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
Sissel Småland Aasheim	The infrastructure of responsibility	Ana Delgado
Silje Morsman	Responsible Research and Innovation (RRI) perspectives in the COMPARE project	Kristin Asdal
Tércio Pinho Filho	Actors recomposition in the O&G industry: a case study for adaptation and innovation from subsea suppliers	Helge Ryggvik
Eili Skrivervik	Innovation and technology transfer in field-development projects on Norway, Brazil and U.S. GoM	Taran Thune
Alina Kontareva	Salvaging and Rebuilding in the Wreckage: Building an Innovative Ecosystem in Post-Soviet Countries	Fulvio Castellacci/ Biveileder UC Davies
Jørgen Aarhaug	How can digitalisation and transport innovations contribute to more efficient and sustainable passenger transport in urban agglomerations?	Olav Wicken og Ove Langeland
Joar Kvamsås	The impact of research collaboration on innovation in firms and industries	Fulvio Castellacci/ Biveileder SSB
Frauke Rohden	Tracing the impact of scientific research in online spaces	Magnus Gulbrandsen/ Biveileder Susanne Bauer

Out of the 33 candidates, 9 were funded by TIK basis and 2 were funded by TIK strategic funds. 12 candidates were funded through nærings- and offentlig PhD. The remaining 10 candidates were funded through external research projects.

PhD courses and seminars

TIK9101 Obligatory PhD seminars:

Spring: 15-16 June 2020, Zoom

Autumn: 3 December 2020, Zoom

TIK 9022 The economics of Innovation: The dark sides of innovation, 21-15 September 2020

TIKs candidates continue to benefit from TIK being involved in national and international research networks like EU-SPRI, EASST – European Association for the Study of Science and Technology, and the Norwegian Research School on Innovation (NORSI), giving access to a large number of research courses and relevant conferences.

Research communication

Web

During 2020, the following research-based news articles were written for TIK's web page.

- “Verden med virus: Utfordrer samspillet mellom dyr og menneske”
- Written in connection with the ResBod project by Tone Druglitrø for the blog “Verden med virus” (At TIK web, 388 visits, 451 page views. The article is still being read with 13 visits the last 60 days).

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).

4 shorter news articles/notices were posted online, 22 publications were announced and 10 TIK in media was reported in 2020. 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 516 times the last 30 days and our web pages in Norwegian are viewed 260 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. This form of dissemination is becoming more popular and TIK are aware the need to develop a communication plan for new initiatives.

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. In 2020 the page increased its number of followers; from 600 to around 700 .

Seminars and workshops at TIK in 2020

Date	Speaker	Title
17.12.2020	Bård Hobæk	Final seminar: Food once removed: Norwegian salmon farming and the politics of feed.

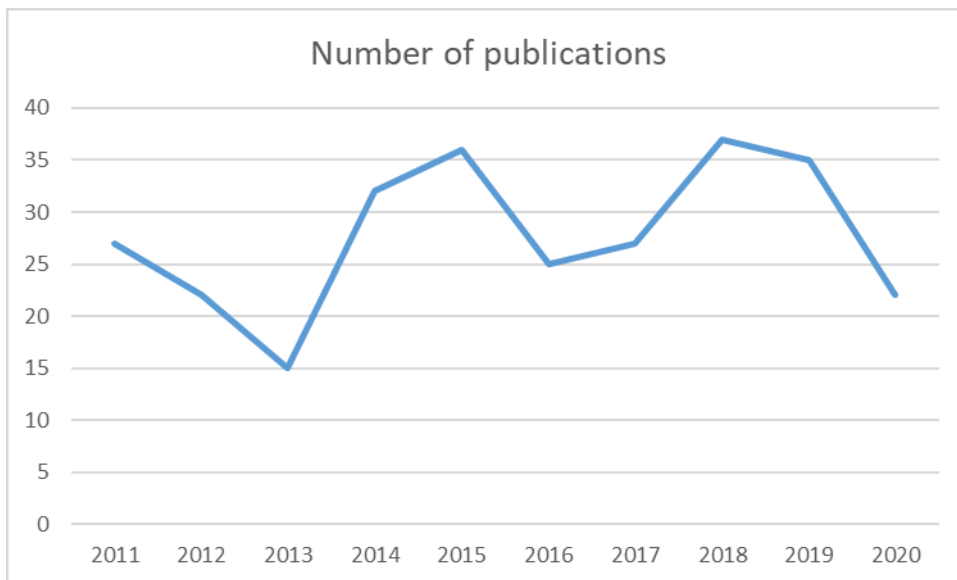
11.09.2020	Sylvia Irene Lysgård	Final seminar: Statoil & the Oil Sands: Tar versus Oil and the trouble of storytelling
25.06.2020	Irene Øvstebø Tvedten	Final seminar: Shades of Green: Calculating and Anticipating the Futures of Shipping
31.03.2020	Henrik Schwabe	Final seminar: Presentation of thesis investigating the effects of emerging ICTs for individual subjective well-being.
16.03.2020	Sveinung Grimsby	Final seminar: How does the Norwegian food industry act during innovation processes?
20.02.2020	Professor Lars Frers (University of South-Eastern Norway)	Tik methods lab: Taking care of the multi-sensual
04.02.2020	Martin Kenney (UC Davis)	Platform-Dependent Entrepreneurs: Power Asymmetries, Risks, and Strategies in the Platform Economy

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

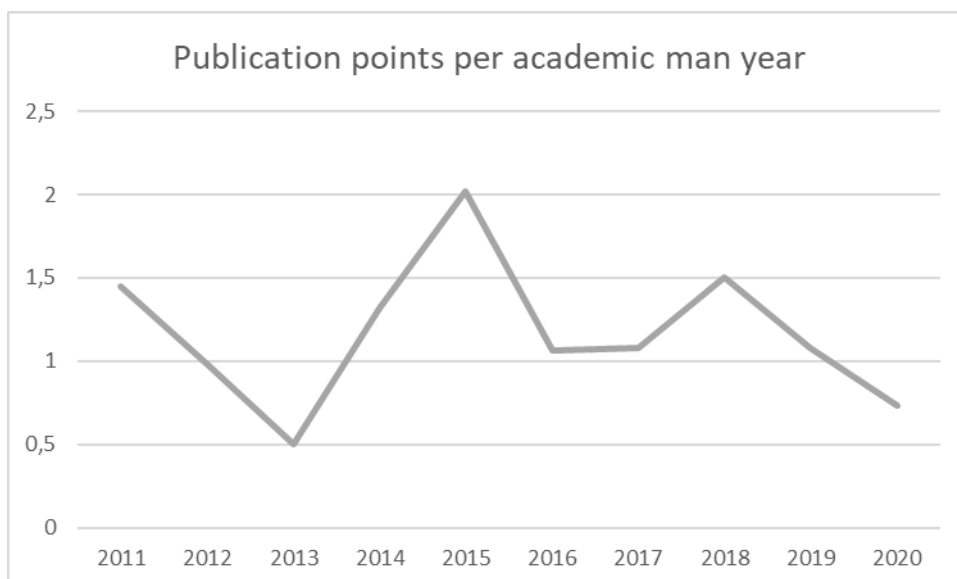
A total of 22 publications were registered in the Cristin database in 2020. This is a significant decrease from the previous year. The reduced publication activity is also a result of the fluctuations that are recognizable in the general publication pattern. Both junior and senior researchers continue to publish in prestigious journals in the fields of innovation studies and STS. 7 out of 22 publications were published in level 2 publications.

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



Source: DBH/Cristin

Converting the publications to publications points, 2020 gave 24,3 points. The graph below shows TIKs publication points per academic man year in the period 2011-2020:



Source: Cristin/DBH

Publications reported to the Norwegian Science Index (NVI) in 2020:

Andersen, Allan Dahl; Wicken, Olav.

Making sense of how the natural environment shapes innovation, industry dynamics, and sustainability challenges. *Innovation and Development* 2020.

Andersen, Allan Dahl; Gulbrandsen, Magnus.

The innovation and industry dynamics of technology phase-out in sustainability transitions: Insights from diversifying petroleum technology suppliers in Norway. *Energy Research & Social Science* 2020 ;Volum 64. s. 1-14.

Asdal, Kristin.

Foucaults metode og nyliberalismen. Eller skal vi heller snakke om den grenseløse og intense innovasjonsøkonomien?. *Agora : Journal for metafysisk spekulasjon* 2020 ;Volum 37.(03-04)

Asdal, Kristin; Hobæk, Bård.

The modified issue: Turning around parliaments, politics as usual and how to extend issue-politics with a little help from Max Weber. *Social Studies of Science* 2020 ;Volum 50.(2) s. 252-270.

Bauknecht, Dierk; Andersen, Allan Dahl; Dunne, Karoline Tornes.

Challenges for electricity network governance in whole system change: Insights from energy transition in Norway. *Environmental Innovation and Societal Transitions* 2020 ;Volum 37.

Castellacci, Fulvio; Schwabe, Henrik.

Internet, unmet aspirations and the U-shape of life. *PLOS ONE* 2020 ;Volum 15.(6)

Castellacci, Fulvio; Viñas Bardolet, Clara.

Permanent contracts and job satisfaction in academia: evidence from European countries. *Studies in Higher Education* 2020.

Enger, Simen G.; Gulbrandsen, Magnus.

Orchestrating collaborative projects: Inside ICT networks in Horizon 2020. *Science and Public Policy* 2020 ;Volum 47.(3) s. 396-409.

Fagerberg, Jan; Hutschenreiter, Gernot.

Coping with Societal Challenges: Lessons for Innovation Policy Governance. *Journal of Industry, Competition and Trade* 2020;Volum 20.

Gregg, Jay Sterling; Jürgens, Jonas; Happel, Maaike Karlijn; Strøm-Andersen, Nhat; Tanner, Anne Nygaard; Bolwig, Simon; Klitkou, Antje.

Valorization of bio-residuals in the food and forestry sectors in support of a circular bioeconomy: A review. *Journal of Cleaner Production* 2020 ;Volum 267.

Gulbrandsen, Magnus; Thune, Taran Mari.

Hybridity and research organisations. I: *Handbook on Hybrid Organisations*. Edward Elgar Publishing 2020 ISBN 9781785366109. s. 116-134.

Høiland, Gry Cecilie Lunder; Klemsdal, Lars.

Organizing professional work and services through institutional complexity – how institutional logics and differences in organizational roles matter. *Human Relations* 2020

Lahn, Bård Lappegård.

A history of the global carbon budget. *Wiley Interdisciplinary Reviews: Climate Change (WIREs)* 2020 ;Volum 00:e636. s. 1-9

Lahn, Bård Lappegård.

Changing climate change: The carbon budget and the modifying-work of the IPCC. *Social Studies of Science* 2020.

Nykamp, Hilde.

Policy mix for a transition to sustainability: Green buildings in Norway. *Sustainability* 2020; Volum 12.(2-446).

Rasmussen, Einar; Benneworth, Paul; Gulbrandsen, Magnus.

Motivating universities to support spin-off firms: Stakeholders and start-up incubation ecosystems. I: *Research handbook on start-up incubation ecosystems*. Edward Elgar Publishing 2020 ISBN 9781788973526. s. 418-434.

Saidi, Trust; Thune, Taran Mari; Bugge, Markus.

Making 'hidden innovation' visible? A case study of an innovation management system in health care. *Technology Analysis & Strategic Management* 2020 s. 1-13

Santoalha, Artur; Boschma, Ronald Adalbert.

Diversifying in green technologies in European regions: does political support matter?. *Regional studies* 2020.

Schwabe, Henrik; Castellacci, Fulvio.

Automation, workers' skills and job satisfaction. *PLOS ONE* 2020.

Skrivervik, Eili.

Insects' contribution to the bioeconomy and the reduction of food waste. *Heliyon* 2020 ;Volum 6.

Svennevik, Elisabeth M.C.; Julsrud, Tom Erik; Farstad, Eivind.

From novelty to normality: reproducing car-sharing practices in transitions to sustainable mobility. *Sustainability: Science, Practice, & Policy* 2020 ;Volum 16.(1) s. 169-183

Tømte, Cathrine Edelhard; Bugge, Markus; Wollscheid, Sabine; Vennerød-Diesen, Frida Felicia.

Ready to Go? Schools? Preparedness for Teaching and Learning Within a One-to-One Program. *Lecture Notes in Computer Science (LNCS)* 2020 ;Volum 12066.