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| **Keywords:** | ITU Journal; future and evolving technologies; scholarly; digital; free of charge; fast; for all; editorial board; inaugural issue; special issue; IoT; bio-nano things; health applications; IoE; terahertz communication; 5G; future networks; AI and machine learning; ITU Challenge; Tsinghua University Press; Intelligent and Converged Networks; |
| **Abstract:** | This document provides information on the establishment of the new ITU Journal on Future and Evolving Technologies and announces the publication of the inaugural issue and the calls for papers for the five upcoming special issues. |

# 1 Introduction

The [ITU Journal on Future and Evolving Technologies](https://www.itu.int/en/journal/j-fet/Pages/default.aspx) (ITU J-FET), was launched in September 2020 and marks a new chapter in the publication of academic research. Under the leadership of the new Editor-in-Chief, [Prof. Ian F. Akyildiz](https://www.itu.int/en/journal/j-fet/Pages/editorial-board.aspx) (Ken Byers Chair Professor Emeritus in Telecommunications at Georgia Tech, USA; h-index: 126; Citations: 121’000+), this journal considers yet-to-be-published papers addressing fundamental and applied research. It shares new techniques and concepts, analyses and tutorials, and learnings from experiments and physical and simulated testbeds. It also discusses the implications of the latest research results for policy and regulation, legal frameworks, the economy and society. Its interdisciplinary approach reflects ITU’s comprehensive field of interest and explores the convergence of ICT with other disciplines.

ITU J-FET is committed to the timely publication of very high quality, peer-reviewed, original papers. **Free, fast, for all**, the Journal aims to promote accessibility of research to academics and industry researchers across the world. The publication is free of charge for both readers and authors, highlighting the true sense of the term "open access". The international [Editorial Board](https://www.itu.int/en/journal/j-fet/Pages/editorial-board.aspx) of experts who are in the forefront of the telecommunications research world, is committed to providing detailed, constructive feedback on submitted papers, as well as a fast turn-around time of less than 3 months from submission to publication.

ITU Member States adopted a new Resolution at the ITU Plenipotentiary Conference, which convened in Dubai, United Arab Emirates, from 29 October to 16 November 2018, to support the further development of the ITU Journal. Members further resolved to establish collaborative efforts with the research community and to raise awareness of the ITU Journal worldwide (Resolution 207 (Dubai, 2018)).

# 2 Publication of the ITU J-FET inaugural issue

The ITU J-FET published its first issue in December 2020 which included ten original research papers that provide an in-depth analysis of evolving technologies.

This issue highlights the use of Internet of Things and Internet of Metamaterial Things, digital signal processing, machine learning and artificial intelligence, 5G and beyond networks, vehicular communications as well as wireless communications necessary for pandemic mitigation.

The ITU J-FET has received 20 original research papers since September 2020 and after a complete and timely review process, with the effort of our Editors and Reviewers, 10 papers were accepted for this premiere issue.

The full set of papers, including forewords from the ITU Secretary- General and the Director of the Telecommunication Standardization Bureau, as well as an Editorial from the Editor-in-Chief, has been compiled into a single volume and made freely available to download from the ITU Journal website, free of charge for readers to access.

# 3 Five upcoming special issues

The ITU Journal will continue publishing online all year round, welcoming papers at any time, on all topics within its scope (please visit the [About ITU J-FET](https://www.itu.int/en/journal/j-fet/Pages/about.aspx) webpage for detailed information) and with the aim of building bridges between disciplines, connecting theory with application, and stimulating international dialogue on the future and evolution of the digital transformation. In addition to the continuous publication of papers on subjects within the ITU Journal’s scope, ITU J-FET will also welcome papers related to its five special issues for 2021. Achieving a significant impact factor is a goal for this Journal and will derive from the relevance of journal papers to the priorities of academia, industry and governments, leading the way to new frontiers in research.

1. **Internet of Bio-Nano Things for health applications**

The first special issue on the [Internet of Bio-Nano Things for health applications](https://www.itu.int/en/journal/j-fet/2021/001/Pages/default.aspx), will present the most recent advances with respect to the theoretical foundations and practical implementation of IoBNT towards health applications. This comes as Internet of Things (IoT) approaches technological maturity with growing number of applications on the market and new integrative ideas emerging to push the current boundaries of IoT and extend its application range. The deadline for paper submissions to this special issue on IoBNT is **22 January 2021.**

The Editorial board comprises expert researchers and includes:

Leading Guest Editor:

* [Bige Deniz Unluturk](https://sites.gatech.edu/bunluturk/), Michigan State University, USA

Guest Editors:

* [Murat Kuscu](https://mysite.ku.edu.tr/mkuscu/), Koc University, Turkey
* [Erin Purcell](https://reilmsu.com/), Michigan State University, USA
* [Wen Li](https://www.egr.msu.edu/mems/), Michigan State University, USA
* [Ulkuhan Guler](https://icaslab.org/), Worcester Polytechnic Institute, USA
* [Nureddin Ashammakhi](https://samueli.ucla.edu/people/nureddin-ashammakhi/), University of California Los Angeles, USA

1. **Internet of Everything**

****The second special issue announced is on the [Internet of Everything (IoE)](https://www.itu.int/en/journal/j-fet/2021/002/Pages/default.aspx) which is described as the interconnection of people, processes, data, and things. It was conceptualized by CISCO as the natural evolution of the Internet of Things (IoT), in the aim of including the entire realm of information sources and destinations in one paradigm.

In the spirit of the ITU J-FET, the objective of this special issue is to contribute to the technological and theoretical advancement in the IoE domain by stimulating novel research contributions covering the main IoE research issues.

The deadline for paper submissions to this special issue on IoE is **1 February 2021.**

The Editorial board is made of the following researchers:

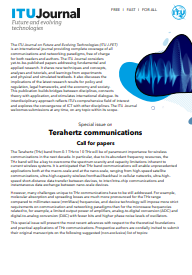
Leading Guest Editor:

* [Giacomo Morabito,](https://www.dieei.unict.it/docenti/giacomo.morabito) University of Catania, Italy

Guest Editors:

* [Luigi Atzori](https://www.unica.it/unica/en/ateneo_s07_ss01_sss01.page?contentId=SHD30924), University of Cagliari, Italy
* [Huansheng Ning](http://www.cybermatics.org/lab/HuanshengNing.html), University of Science and Technology Beijing, China
* [Joel J. P. C. Rodrigues](http://lattes.cnpq.br/5050313480683695), Federal University of Piauí (UFPI), Brazil

1. **Terahertz communications**

The third special issue of the ITU J-FET will present the most recent advances with respect to the theoretical foundations and practical applications of [Terahertz communications](https://www.itu.int/en/journal/j-fet/2021/003/Pages/default.aspx).

It is anticipated that THz band communications will enable unprecedented applications both at the macro-scale and at the nano-scale, ranging from high-speed satellite communications, ultra-high-capacity wireless fronthaul/backhaul in cellular networks, ultra-high-speed short-distance data transfer between devices, to inter/intra-chip communications and instantaneous data exchange between nano-scale devices.

The Terahertz (THz) band from 0.1 THz to 10 THz will be of paramount importance for wireless communications in the next decade. This issue will explore how the THz band will be key to overcoming the spectrum scarcity and capacity limitations inherent in current wireless systems.

The deadline for paper submissions to this special issue on THz Communications is **8 February 2021.**

Members of the Editorial board for this special issue include:

Leading Guest Editor:

* [Wolfgang Gerstacker](https://www.idc.tf.fau.de/person/wolfgang-gerstacker/#biography), Friedrich-Alexander University Erlangen, Germany

Guest Editors:

* [Chong Han](https://sites.ji.sjtu.edu.cn/chonghan/), Shanghai Jiao Tong University, China
* [Josep Miquel Jornet,](https://unlab.tech/team_members/josep-miquel-jornet/) Northeastern University, USA

1. **Wireless communication systems in beyond 5G**

****The special issue on [Wireless communication systems in beyond 5G era](https://www.itu.int/en/journal/j-fet/2021/004/Pages/default.aspx) is the fourth special issue announced for the ITU J-FET. Papers submitted to this issue will explore future and evolving technologies and discuss the potential of technology evolution, addressing what key future services and applications might be needed to design novel beyond 5G wireless communication systems.

This issue will also present research on the relationship of 5G to machine learning and artificial intelligence tools and technologies, Unmanned Aerial Vehicles, Low-Earth Orbit level microsatellite consolations and wireless sensor platforms as well as augmented and virtual reality. This issue will accept papers submissions until **15 February 2021.**

The Editorial Board includes:

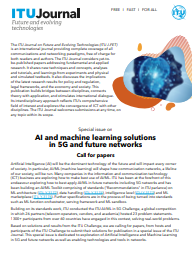
Leading Guest Editor:

* [Dejan Vukobratovic](https://sites.google.com/view/vukobratovic), University of Novi Sad, Serbia

Guest Editors:

* [Guan Gui](http://www.scholat.com/guiguan), Nanjing University of Post and Telecommunications, China
* [Güneş Karabulut Kurt](https://securewireless.io/), Istanbul Technical University, Turkey
* [Haris Gačanin](http://www.ice.rwth-aachen.de/), RWTH Aachen University, Germany
* [Matti Latva-aho](https://www.oulu.fi/university/researcher/matti-latva-aho), University of Oulu, Finland
* [Petar Popovski](http://petarpopovski.es.aau.dk/), Aalborg University, Denmark

1. **AI and machine learning solutions in 5G and future networks**

****The fifth special of the ITU J-FET builds on the standards work of ITU including on ML architecture ([ITU Y.3172](https://www.itu.int/rec/T-REC-Y.3172/en)), data handling ([ITU Y.3174](https://www.itu.int/rec/T-REC-Y.3174/en)), intelligence level ([ITU Y.3173](https://www.itu.int/rec/T-REC-Y.3173/en)) and ML marketplace ([ITU Y.3176](https://www.itu.int/rec/T-REC-Y.3176/en)) as well as on the [ITU AI/ML in 5G Challenge](https://www.itu.int/en/ITU-T/AI/challenge/2020/Pages/default.aspx). The AI/ML in 5G Challenge 2020 was a global competition in which 26 partners (telecom operators, vendors, and academia) hosted 23 problem statements. 1300+ participants from over 60 countries have engaged in this contest, solving real-world problems.

Based on solutions and results from this Challenge, hosts and participants are encouraged to submit their solutions for publication in this special issue of the ITU Journal, which is dedicated to exploration of artificial intelligence and machine learning in 5G and future networks as well as enabling technologies and tools in networks.

Paper submissions to this issue will be accepted until **22 February 2021**.

Members of the Editorial Board for this issue include:

Leading Guest Editor:

* [Chih-Lin I](https://attend.ieee.org/wieils-beijing-2019/chih-lin-i/), China Mobile Research Institute, China

Guest Editors:

* [Akihiro Nakao](https://www.nakao-lab.org/?page_id=55), University of Tokyo, Japan
* [Aldebaro Klautau,](https://www.lasse.ufpa.br/aldebaro/) The Federal University of Pará (UFPA), Brazil
* [Nuria González Prelcic](https://ece.ncsu.edu/people/ngonzal9/), North Carolina State University, USA
* [Albert Cabellos-Aparicio](https://personals.ac.upc.edu/acabello/), Technical University of Catalonia, Spain

For more information on the ITU J-FET and the related special issues, please visit the ITU Journal [webpage](https://www.itu.int/en/journal/j-fet/Pages/default.aspx) or contact the ITU Journal Team at [journal@itu.int](mailto:journal@itu.int).

# 5 Joint journal with Tsinghua University Press

Based on the publication agreement signed between Tsinghua University Press and ITU in January 2019, a joint publication titled “[Intelligent and Converged Networks](http://icn.tsinghuajournals.com/)” was created and launched in June 2020 with Prof. Jian Song, Tsinghua University, China, serving as Editor-in-Chief.

The first issue of this joint publication is available on the [IEEE *Xplore* Digital Library](https://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=9198048&punumber=9195266).

A [Series on Data Driven Intelligence, Sustainability, and Systems](http://icn.tsinghuajournals.com/EN/column/item1649.shtml) and a [special Issue on Artificial Intelligence Aided 6G Communications](http://icn.tsinghuajournals.com/EN/column/item1647.shtml) are under preparation.

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