

**Proceedings of the**  
**2021 International Conference on**  
**Electronics, Communication, Information Technology and**  
**Management (ICECIM)**



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**Organized by:**  
**School of Electronics and Communication Engineering**

REVA University, Rukmini Knowledge Park, Yelahanka, Bangalore

**In association with:**  
**IARDO & Conference World**

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## ***Preface***

Conference World and AR Research Publication is fast growing group of academicians in Engineering, Sciences and Management. AR Research Publication is also known for fast reply and zero error work. Conference world has organized a various conference at renowned places namely Delhi University; New Delhi, Jawaharlal Nehru University; New Delhi, PHD Chamber of Commerce and Industry New Delhi, YMCA New Delhi, India International Centre New Delhi Sri Venkateswara college of Engineering and Technology, Andhra Pradesh, Dhananjay Mahadik Group of Institutions (BIMAT), Shivaji University, Maharashtra, Vedant Engineering Kota and many more places across the country.

We are very pleased to introduce the proceedings of the "*International Conference on Electronics, Communication, Information Technology and Management*". As for previous conferences, the theme was the link between the information provided by conference world and the use made of this information in assessing structural integrity. The level of interest in the subject matter of the conference was maintained from previous events and over 207 suitable papers were submitted for presentation at the conference.

## About University

Established under the REVA University Act 2012, the University is recognised by the University Grants Commission (UGC) and is approved by the AICTE (All India Council for Technical Education). REVA University prides itself in contributing to every student's holistic development. The University currently offers 49 full-time Under Graduate Programs, 28 full-time Postgraduate programs, 2 part-time Post Graduate programs. The University offers programs in Engineering, Architecture, Science and Technology, Commerce, Management Studies, Law, Arts & Humanities, and Performing Arts. Courses are offered in Certificate/Diploma and Post Graduate Diploma too. REVA University facilitates research leading to a Doctoral Degree in all disciplines. The programs offered by REVA University are well-planned and designed based on methodical analysis and research with emphasis on knowledge assimilation, practical applications, hands-on training, global and industrial relevance, and their social significance. REVA University believes in preparing students through the Choice Based Credit System (CBCS) and Continuous Assessment and Grading Pattern (CAGP) of education. The CBCS & CAGP pattern of education has been introduced in all programmes to enable students to opt for subjects of their choice in addition to the core subjects of study and to train them with vocational skills. This methodology helps students earn more credits and facilitates students pursue additional Proficiency Certificates and Diplomas.

The faculty is an active part of the academic dialogue. Teachers and instructors with illustrious academic experience are the architects of the meticulously designed curriculum and program modules offered at REVA University. They come with industrial exposure and experience that often translates through their teaching, thus bridging the gap between the industry and academia. REVA University has an updated, ever-evolving collection of books, journals, and digital content in the library with the latest IT infrastructure that ensures students have information at their disposal. The lush green campus, state-of-the-art laboratories, custom-designed classrooms to enable seamless learning, and world-class indoor and outdoor sports facilities make REVA University the most preferred university among students and MNCs that visit the campus for placements.

## About School of Electronics and Communication Engineering

The school of Electronics and Communication Engineering offer B. Tech in Electronics and Communication Engineering (ECE), B Tech in Electronics and Computer Engineering, B Tech in Robotics and Automation and M. Tech programs in various specialized streams. Course curriculum of school of ECE is designed to give greater emphasis on core Electronics and Communication Engineering with a flexibility to explore few of the areas like circuits, devices, signal processing, communication engineering and programming. B. Tech in

Electronics and Computer Engineering program is designed to provide quality education imparting skills on Electronics, hardware, software and IT development. B. Tech in Robotics Engineering is an engineering field that deals with the construction, design, application, and operation of robots. Robotics Engineering is an interdisciplinary branches of Electronics & Communication Engineering, Mechanical Engineering and Electrical & Electronics Engineering. Recent developments in the field of robotics have helped in bringing forth a new era of technology and myriad career opportunities. The school has well experienced faculty and staff to cater to the academic and overall development of students. The School of ECE labs are equipped with advanced hardware and software tools to pursue research in the field of signal processing, VLSI and Embedded Systems, MEMS, Wireless Communication and sensor Networks.

## **About Conference**

2021 International Conference on Electronics, Communication, Information technology and Management (ICECIM) focuses on various Electronics Engineering & Management domains including Image processing, Communications, Embedded Systems, and VLSI etc. The conference aims to provide the opportunity for academic students, researchers, and scientists to share their ideas. More innovative and novel ideas on all topics of Engineering, Science and Management.

### **The Major Fields include:**

1. Communication
2. Signal processing
3. Embedded system
4. Computer Engineering
5. Information Technology
6. Science
7. Management

(Includes all sub fields of Major Fields)

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### **Message**

It gives me immense pleasure to note that the School of ECE, REVA University is organizing the International Conference on Electronics, Communication, Information Technology and Management (ICECIM) 2021.

This is a testament to the fact that Research is a part of the academic culture at REVA University and Research is an integral component of the intellectual growth map at REVA. A conference of this stature must continue to be the platform for researchers, academicians, industrialists, and students. The ethos of REVA should motivate young research scholars and many youngsters to pursue research. I have always emphasized the need for quality research and REVA should be a forerunner in contributing path-breaking and innovative research publications and patents.

Our event at the 2021 International Conference on Electronics, Communication, Information Technology and Management (ICECIM) should go beyond mere publications, track real-time benefits and the impacts of the research on society. Let us deliberate on how we measure this impact on society. I wish the School of ECE team all the very best. To all participants from various institutions across the country, wish you all the best and have a comfortable stay at the campus!

**Dr P Shyama Raju**  
Chancellor, REVA University  
Bengaluru, India





### **Message**

It is delightful to note that the International Conference on Electronics, Communication, Information Technology and Management (ICECIM) 2021 will be held on June 2<sup>nd</sup> and 3<sup>rd</sup> 2021. Research is the new-age mantra for success today. With the advent of technology and many advances in several fields, research has taken a prime place to foster innovation and strengthen academic excellence. At REVA University, research is encouraged, and research scholars are given the right academic infrastructure to carry out quality research at all levels. An independent Research and Innovation Cell has been established at REVA to promote quality research. More than 1,200 papers have been published in peer-reviewed journals, attracting several citations, a testimony to progressive research culture at REVA. Many funded research projects and industry-sponsored research works have elevated the standard and rigour of the research conducted on the campus.

The proposed International Conference on Electronics, Communication, Information Technology and Management (ICECIM) 2021 shall be a significant platform for a more open global discourse and guided understanding.

**Dr. M. Dhanamjaya**  
Vice Chancellor, REVA University  
Bengaluru, India



## **Message**

The conference provides platform for researchers to get networked and exchange the ideas for further progress in research and development. 2021 International Conference on Electronics, Communication, Information Technology and Management (ICECIM) is a flagship conference of REVA University, and it is motivated by the grand success of ICAECC 2014, ICAECC 2018, ICAECC 2020, TEMSMET 2020 wherein all the papers accepted and presented have been indexed in IEEE Xplore and Scopus.

I thank our Honorable Chancellor, REVA University, Dr. P. Shyama Raju for his constant support and encouragement to conduct such a prestigious conference in the state of Karnataka. I thank Vice Chancellor Dr. M. Dhanamjaya, Registrar, Dr. N Ramesh for motivation and support to organize this conference. My sincere gratitude's are towards our vibrant Electronics and Communication Engineering faculty and staff members for their untired efforts towards the conference.

The conference has peer reviewed process for all the articles to maintain the quality interactions and publications by using feedback from reviewers and anti-plagiarism software. Keynote sessions have been arranged to benefit the students and researchers to work on recent challenges in emerging technical areas. The organizing committee of REVA University has done a good job in bringing out the proceedings, thanks to committee.

I wish all the conference participants and organizers a big success!

**Dr. Rajashekhar C. Biradar**  
Director, School of ECE



## **Message**

ICECIM-2021 provides an opportunity for the Researchers, Engineers, Scientists, and specialists in the various research and development fields of Engineering and Technology. The conference offers a premise for the experts to gather and interact intensively on the topics of, Electronics and Communication, Instrumentation, Computer Science and Information Technology, Electrical, emerging areas like AI & ML.

I hope that the conference serves as a locus for interdisciplinary, a space for discourse and collaboration. I would like to express my appreciation to the organizing committee for their dedicated efforts to materialize the conference. I hope all the participants will have a fruitful and beneficial experience.

I thank our Honorable Chancellor, REVA University, Dr. P. Shyama Raja for his constant support and encouragement to conduct such a prestigious conference from REVA University. I thank Vice Chancellor Dr. M. Dhanamjaya, Registrar, Dr. N Ramesh, Dr. Divakar BP, Dean R&I, Dr. Bhagavnavulu, Dean IQAC, for their motivation and support to organize this conference. My sincere gratitude's are towards our vibrant Electronics and Communication Engineering faculty and staff members for their un-tired efforts towards the conference. I thank Dr. Rajashekhar C Biradar, Director School of ECE, for his constant support in organizing and conducting this conference.

I wish all the conference participants and organizers a big success!

**Dr. K. M. Sudharshan**

Asst. Director, School of ECE

#### Chief Guest & Guest of Honour

1. **Dr. Johnson Ihyeh Agbinya** – As a Chief Guest  
Professor and Head, School of Information Technology and Engineering, Melbourne Institute of Technology, **Australia**
2. **Dr. Ahmed A Elngar** – As Guest of Honour  
Professor, Faculty of Computer and Artificial Intelligence, Beni-Suef University, **Egypt**

#### Speaker at Valedictory function

1. **Dr. Aminu Ahmed**  
Professor, Business Technology Management, Department of Management and Information Technology, Abubakar Tafawa Balewa University, **Nigeria**  
Topic delivered “**Imperative of Technology Management**”

#### Speaker of Keynote Sessions

1. **Dr. P. Sagaya Aurelia**,  
Professor, Department of Computer Science, Christ University  
Topic: “Human Computer Interaction: Trends, Challenges and Research Scopes”
2. **Dr P. Sundara Venkatesh**  
Dean - Research & Development, Sri S. Ramasamy Naidu, Memorial College, Tamil Nadu  
Topic: “Nanowires - Building blocks for Electronic Devices”
3. **Dr. W. Deva Priya**  
Professor, KSR Institute of Technology, Tamil Nadu  
Topic: “Advanced Driver assistance Systems”
4. **Dr. Nilesh J Uke**  
Principal, Trinity College of Engineering, Pune  
Topic: “Effective searching using Google”

#### External Session Chairs

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Professor, SRM Institute of Science and Technology, Chennai.
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Dean Research and Development Cell , G. H. Rasoni University, Amravati.
12. **Dr. S. M. Husain**  
Group Director, Institute of Technology & Management, Aligarh, Uttar Pradesh.

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