



# 8TH IET SMART CITIES SYMPOSIUM 2024

1-3 DECEMBER 2024

HYBRID EVENT -WITH VIRTUAL ACCESS SYMPOSIUM – UNIVERSITY OF BAHRAIN

TECHNICAL SUPPORT:

THE INSTITUTION OF ENGINEERING AND TECHNOLOGY

Full-Paper Reviewed Manuscripts Submissions.

Symposium Proceedings will be submitted to the IET Inspec, IEEE Xplore, and Scopus Elsevier's indexing.

Distinguished Contents will also be examined by IET for possible submission to IET JOURNALS, after selection and extension.

## 8<sup>th</sup> IET-SCS-2024

**IET** The Institution of  
Engineering and Technology

TECHNICAL SPONSOR AND SUPPORT



An annually run IET symposium related to development of smart innovations for smart cities. The symposium objectives are: to create awareness through research and publications about the future prospects of smart cities. The symposium also serves as a platform to exchange ideas and thoughts in international prospect and stand. In addition, the symposium is emphasizing the role of academia, universities, industries, experts, and innovations for promoting smart cities solutions, projects, smarter ideas, consultancies and continuity in the form of indexed publications. The 8th IET International Smart Cities Symposium (8-scs-2024) will be held at the University of Bahrain, Bahrain, on December 1-3, 2024. The symposium will feature world-class plenary speakers, major technical symposiums, industry and academic panels, and invited tracks. For more information, please visit symposium website: <https://www.iet-smartcities-symposium.com/>. You are cordially invited to submit your latest research work to the symposium. Best paper awards will be selected from accepted papers. The symposium and tracks papers will be published and indexed in IET Inspec - IEEE Xplore, and will appear on other indexing databases.

TECHNICAL PROGRAM:

Details are found at:

<https://www.iet-smartcities-symposium.com/>

SYMPOSIUM KEYNOTE, PAPERS, AND PROCEEDING VOLUME SUMMARY



# THE 8<sup>TH</sup> IET SCS-2024 SYMPOSIUM

## SETUP AND PURPOSE



## IET Technical Support: The Institution of Engineering and Technology















# DETAILED TECHNICAL PROGRAM AND PARALLEL SESSIONS

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DAY -I

SUNDAY, DECEMBER 01, 2024

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DAY -I: SUNDAY, 1<sup>ST</sup> DECEMBER 2024

Keynote Speech: 01: Sunday, 1<sup>st</sup> December 2024, 09:20+03 - 10:00+03 (Asia/Bahrain)

## PRINTABLE SENSORS AND ENERGY HARVESTERS FOR SMART CITIES



Professor, Dr. Vincenzo Pecunia, Ph.D. Cantab., FIMMM, FIET, FInstP, SMIEEE, P.Eng.

School of Sustainable Energy Engineering, Simon Fraser University, 10285 University Drive, Surrey, British Columbia V3T 0N1, Canada

Session Chair: Dr. Suresh Vishwakarma, P.Eng., CEng, MIET, MBA, PhD, PostDoc, Honorary Professor, Amity University, India, IET-UK Representative for Western Canada

MAIN-THEATRE HALL – VIRTUAL ACCESS

### TALK ABSTRACT

In the pursuit of sustainable smart cities, the integration of low-cost, scalable, and energy-efficient technologies is paramount. This presentation explores the crucial role of printable electronics in advancing smart city infrastructure. Our research focuses on the development of printable semiconductors (e.g., organic semiconductors, lead-free perovskite derivatives, and carbon nanotubes) for low-cost ultra-low-power electronics, indoor photovoltaics, and sensors. These technologies offer significant potential for smart city applications involving distributed sensor networks, energy harvesting systems, and responsive urban environments. Specifically, we demonstrate how printable indoor photovoltaics, based on lead-free perovskite derivatives, could power IoT devices in indoor environments, reducing reliance on batteries and minimizing electronic waste. Furthermore, our printable light sensors, based on organic and perovskite-based semiconductors, could enable real-time monitoring, crucial for adaptive lighting and energy management systems in smart cities. The flexibility, cost-effectiveness, and low environmental impact of these printable technologies position them as potential key enablers of next-generation smart city applications. This talk will detail the technological innovations and application potential of our research, providing insights into how printable sensors and energy harvesters could contribute to the sustainable evolution of smart cities, from energy-efficient buildings to intelligent transportation systems.

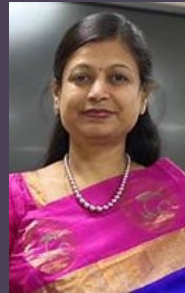
### SPEAKER DETAILS: DR. VINCENZO PECUNIA

Prof. Vincenzo Pecunia is the Head of the Sustainable Optoelectronics Research Group at Simon Fraser University, Canada. His research focuses on environmentally friendly, printable semiconductor devices for energy harvesting and sensing, with the aim of advancing sustainability-focused applications such as smart cities, digital homes, precision agriculture, and Industry 4.0. He has pioneered ultra-low-power printed electronics, indoor photovoltaics based on lead-free perovskite derivatives, and printable narrowband organic photodetectors with cutting-edge performance. In recognition of his contributions, Prof. Pecunia has been awarded the Fellowship of the Institution of Engineering and Technology (FIET), the Fellowship of the Institute of Materials, Minerals & Mining (FIMMM), and the Fellowship of the Institute of Physics (FInstP). Prof. Pecunia earned his PhD in Physics from the University of Cambridge. He has published extensively in top journals, including Nature, Nature Electronics, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, ACS Nano, and Nano Energy, and has authored books for Institute of Physics Publishing and Cambridge University Press.

DAY -I: SUNDAY, 1<sup>ST</sup> DECEMBER 2024

Keynote Speech: 01: Sunday, 1<sup>st</sup> December 2024, 10:00+03 - 10:30+03 (Asia/Bahrain)

## THE CONVERGENCE OF ARTIFICIAL INTELLIGENCE, ELECTRIC VEHICLES, AND INDUSTRIAL TECHNOLOGY



Dr. Mrinal R Bachute

Associate Professor and Head of Industry Connect at Symbiosis Institute of Technology, Pune under Symbiosis International Pune, India

Session Chair: Dr. Tagore Ramlal, University of Trinidad and Tobago, and Chair, IET Trinidad and Tobago LN. Trinidad

MAIN-THEATRE HALL – VIRTUAL ACCESS

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### TALK ABSTRACT

The convergence of Artificial Intelligence (AI) and eMobility is transforming the transportation landscape. This talk explores the profound impact of AI on electric vehicle (EV) adoption, infrastructure optimization, and sustainable transportation. AI-driven EV charging optimization and energy management Predictive maintenance and vehicle health monitoring Intelligent routing and navigation for EVs Autonomous driving and its implications on eMobility Data analytics for EV adoption and infrastructure Insights into AI's role in enhancing eMobility efficiency and sustainability Understanding of AI-driven innovations in EV charging and infrastructure Perspectives on the future of transportation and the intersection of AI and eMobility.

### SPEAKER DETAILS: DR. MRINAL R BACHUTE

Dr. Mrinal R Bachute, PhD (Electronics), ME (Digital Electronics) is an Associate Professor and Head, of Industry Connect at Symbiosis Institute of Technology, Pune under Symbiosis International (Deemed University) Pune, India. She has more than 24 years of experience in teaching and research. She has guided many postgraduate and undergraduate students in their projects. She is currently guiding the doctoral research of 5 scholars. Dr. Mrinal's areas of specialization include computer vision, Digital Image Processing, Machine Learning Artificial Intelligence, and Adaptive Signal Processing. She has received research funding from the University of Pune and All India Council for Technical Education's Quality Improvement Program grants. She has presented her work at many international workshops and conferences and chaired technical sessions also. Her research papers have been published in reputed journals and conference proceedings at the national and international levels. Dr. Mrinal Bachute has also delivered invited talks and expert sessions at many national and international platforms, including at IET-UK's seminar in Vancouver Canada, ZE Power Engineering, Vancouver Canada, and at IET local network in Trinidad and Tobago. She has been a paper reviewer for conferences and reputed journals including IEEE access, springer nature and Elsevier.

DAY -I: SUNDAY, DECEMBER 1, PARALLEL SESSIONS



## DAY -I: Sunday, December 1 10:30 - 13:00 (Asia/Bahrain):

Parallel Session: SA01: Internet of Things and Smart Applications-PART-A

Hall Hall-01: [SESSION JOINING: HALL-01](#)

Session Chair: Dr. Raja Mohamed M Sumsudeen

- |       |  |
|-------|--|
| 10:30 | 1571054800: Optimizing Sampling for Ontario's K-12 Wireless Network Data.<br>Dr. Salam Ismaeel (Humber College, Canada), Dr. Nihad Al-Juboori (Business Insights and Analytics, Canada), Dr. Mirza Kamaludeen (ig2 Group, Canada)  |
| 10:45 | 1571054797: Assessing K-12 Broadband Needs: Data and Industry Insights.<br>Dr. Salam Ismaeel (Humber College, Canada), Dr. Nihad Al-Juboori (Business Insights and Analytics, Canada), Dr. Mirza Kamaludeen (ig2 Group, Canada)  |
| 11:00 | 1571009697: Solar-Powered IoT-Enabled Smart Water Quality Monitoring System.<br>Ms. Ghadeer Mohammed Alhaddar (University of Bahrain, Bahrain), Ms. Hawra Bader Jaafer Ghayeb (UOB, Bahrain), Dr. Raja Mohamed M Sumsudeen (University of Bahrain, Bahrain)  |
| 11:20 | 1571048000: Real-time Astute Streetlight Traffic Flow Adaptation Using IoT and Machine Learning.<br>Dr. Sandeep Kumar Sharma (Manipal University Jaipur, India), Dr. Pramod Singh Rathore (Manipal University Jaipur, India), Mr. Sahil Choudhary (Manipal University Jaipur, India)   |
| 11:40 | 1571046125: IoT-Based Mobile Drug Dispenser for Developing Countries.<br>Dr. Keith Machingamidze (Harare Institute of Technology, Zimbabwe), Mr. Munyaradzi Charles Rushambwa (Harare Institute of Technology, Zimbabwe), Dr. Yogesh C K (VIT, India), Dr. Rajkumar Palaniappan (University of Technology Bahrain, Bahrain), Dr. Vikneswaran Vijean (Universiti Malaysia Perlis, Malaysia), Dr. Fizza Ghulam Nabi (University of the Punjab, Pakistan)             |
| 12:00 | 1571045626: Internet of Water: Quantifying IoT's Impact on Urban Water Management and Resource Optimization in Smart Cities.<br>Mrs. Swathi Chundru (Motivity Labs INC, USA & Motivity Labs Inc, USA), Mr. Arunkumar Thirunagalingam (Santander Consumer USA, USA), Mr. Praveen Kumar Maroju (Walmart, USA), Mr. Harsh Yadav (Senior Software Developer, USA), Dr. Pawan Whig (India, India)   |
| 12:20 | 1571045469: IoT Malware Detection and Identification Using Deep Learning and Behavioral Traffic Analysis.<br>Dr. Rajmohan Rajendran (SRM Institute of Science and Technology, India), Dr. Ananth kumar Tamilarasan (IFET College of Engineering, India), Dr. Saran Raj S (Vel Tech Rangarajan Dr Sagunthala R&D Institute of Science and Technology, India), Mr. Jayakumar D (IFET College Engineering, India), Mr. Ramkumar M o (IFET College Engineering, India) |
| 12:40 | 1571045446: Consumer IoT: Online Purchasing Behaviour and Its Security Implications in Smart City.<br>Ms. Trisha Sharma (Himalayiya University, India), Dr. Ruchi Tyagi (Adjunct Faculty, Asian Institute of Technology, Thailand), Dr. Shailendra Kumar Pokhriyal (Himalayiya University & Harvard Summer School, India))   |



















DAY -II

MONDAY, DECEMBER 02, 2024



DAY -II: 2<sup>ND</sup> MONDAY, DECEMBER 2024

Keynote Speech: 03: 2<sup>nd</sup> Monday, December 2024, 9:00 – 9:30 Asia/Bahrain)

## ENHANCEMENT OF THE SMART CITY CONCEPT THROUGH A LOW-COST-ON-THE-ROAD-UNIT FOR TRAFFIC MANAGEMENT



Dr. Fotis Giannopoulos

Prisma Electronics S.A., HQ-Factory: 87 Demokratias Ave, 68 100, Alexandroupolis, Greece

Session Chair: Dr. Anup Vibhute, Professor in E&TC Engg, Dr. D Y Patil Institute of Technology, Pune 411018, India

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MAIN-THEATRE HALL – VIRTUAL ACCESS

### TALK ABSTRACT

Smart cities are cities that embrace technology and incorporate it, benefiting from it and improving the safety and quality of life of their citizens. Over the past years, IoT solutions have proven the added value they bring in many aspects of everyday life in the modern cities. Prisma Electronics, via its integrated and ever-expanding PrismaSense smart solutions ecosystem, attempts to integrate IoT and sensor networks-related novelties in the modern citizens' everyday lives, thus improving them. Two recent applications of PrismaSense are going to be presented: The first focuses on safety and energy efficiency improvement and provides critical infrastructure structural health condition and energy efficiency monitoring for the maritime industry with direct application to more critical infrastructures of any city. The second focuses on facilitating and operating independent, parallel satellite communication channels for the maritime industry, provided by Prisma Electronics' first nanosatellite mission. The ultimate goal is to effectively and uninterruptedly collect, analyze and fuse data to achieve data-driven decisions and condition-based maintenance for critical assets, guaranteeing citizen safety in the smart cities of the future.

### SPEAKER DETAILS: DR. FOTIS GIANNOPOULOS

Dr. Fotis Giannopoulos received his diploma in Electrical and Computer Engineering from the National Technical University of Athens. He has a PhD degree in Signal Processing and Pattern Recognition from the National Technical University of Athens. He is experienced in designing, simulating and testing analog and digital circuits. He is also experienced in designing Internet of Things (IoT) applications and products. He is currently a member of the R&D department of Prisma Electronics.

DAY -II: 2<sup>ND</sup> MONDAY, DECEMBER 2024

Keynote Speech: 04: 2<sup>nd</sup> Monday December 2024, 9:30 – 10:30 (Asia/Bahrain)

## ARTIFICIAL INTELLIGENCE IN SMART CITIES: TRANSFORMING DIGITAL HEALTHCARE FOR URBAN COMMUNITIES



Dr. Vikneswaran Vjjean

Associate Professor, Faculty of Electronic Engineering & Technology, Universiti Malaysia Perlis, Kampus Induk Pauh Putra, Pauh, Perlis, Malaysia

Session Chair: Dr. Victor Nagesparan, Assistant Professor, UCSI University, Malaysia

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MAIN-THEATRE HALL – VIRTUAUL ACCESS

### TALK ABSTRACT

The keynote will explore how AI-driven innovations are revolutionizing healthcare systems to meet the challenges of growing urban populations. Key applications, such as AI-powered public health monitoring, predictive healthcare analytics, and enhanced accessibility to medical services, will be highlighted as pivotal solutions to urban healthcare challenges. Additionally, insights from ongoing research on cardiovascular disease diagnostics through phonocardiograms and functionality brain analysis in ketum-dependent subjects will be shared, demonstrating AI's potential in personalized and specialized healthcare.

### SPEAKER DETAILS: DR. ABDEL KHOODARUTH

Associate Professor Dr. Vikneswaran Vjjean is a Research fellow of Sports Engineering Research Center and Postgraduate Program Chair (Computer Department), Faculty of Electronic Engineering & Technology, Universiti Malaysia Perlis, Malaysia. He is well-versed in the academic and research industries, specializing in bio-signal processing. He received his PhD from University Malaysia Perlis, Malaysia, in the area of Biomedical Electronic Engineering. Dr. Vikneswaran's research interests span over evoked responses, phonocardiogram analysis, speech analysis, and artificial intelligence, among others, resulting in numerous international peer-reviewed publications and copyrights. Dr. Vikneswaran is a renowned speaker, active reviewer for many ISI-indexed journals, and a registered engineer with professional affiliations including the Engineering Council, UK, Institution of Engineering and Technology, UK, and the Board of Engineers Malaysia. He is also an Engineering Technology Accreditation Council (ETAC) Panel registered with the Board of Engineers Malaysia. He is recognized as a dedicated educator, prolific researcher, and influential figure in bio-signal processing, committed to advancing knowledge and fostering industry-academia collaborations.

DAY -II: MONDAY, DECEMBER 2, PARALLEL SESSIONS













DAY -III

TUESDAY, DECEMBER 03, 2024

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## DAY -III: 3<sup>RD</sup> TUESDAY, DECEMBER 2024

Tuesday, 3<sup>rd</sup> December 2024, 8:30 – 9:00 (Asia/Bahrain) - D3: Day3 – Getting Ready, and Platform Technical Help

Keynote Speech: 05

### RE-IMAGING SMART CITIES SEARCH APPLICATIONS WITH LLMS



Dr. Lakshmanan Sethu Sankaranarayanan, TAM - GenAI/AI & ML Solutions, Google USA, California, USA

Session Chair: Ms. Shefali Vishwakarma, Member, IET - Communities Committee America, Simon Fraser University, Burnaby BC, Canada

[MAIN-THEATRE HALL – VIRTUAUL ACCESS](#)

#### TALK ABSTRACT

Talk Abstract: The ever-expanding landscape of smart cities presents a challenge: efficiently navigating the vast amount of data and resources available to citizens. Traditional search applications often struggle to keep pace with the dynamic nature of these environments. This talk explores how Large Language Models (LLMs) can revolutionize smart city search, offering a more intuitive and comprehensive user experience. We begin by outlining the limitations of current search functionalities in smart cities. Siloed data and keyword-based search make it difficult for citizens to find the information they need, hindering engagement and overall user satisfaction. Next, we introduce the transformative potential of LLMs. By ingesting and understanding vast amounts of unstructured data, LLMs can provide a more nuanced and context-aware search experience. Imagine a resident asking, "What's the fastest way to get to the public library considering current traffic conditions and nearby bike-sharing availability?" An LLM-powered search engine could not only understand the natural language query but also synthesize data from transportation departments, bike-sharing services, and real-time traffic feeds to deliver an optimal answer. The talk will delve into the specific applications of LLMs in smart city search. We'll explore how LLMs can personalize search results based on user preferences and past interactions, fostering a more user-centric experience. We'll also discuss the potential for LLMs to anticipate user needs and proactively surface relevant information, promoting proactive citizenry and engagement with city services. In conclusion, this talk presents a compelling vision for the future of smart city search, powered by the transformative capabilities of Large Language Models. By harnessing the power of LLMs, we can empower citizens to navigate their smart cities with greater ease and efficiency, ultimately fostering a more connected and thriving urban environment.

#### SPEAKER DETAILS: ABOUT LAKSHMANAN SETHU SANKARANARAYANAN

Lakshmanan is an award winning Technical Account Manager for Google Cloud in North America where he works with enterprise customers to help them innovate on AI/ML Solutions. He has delivered five + Keynote speeches for IEEE international conferences in 2024 & 2024 across the globe and reviewed 110+ IEEE Research papers and springer journals. He is currently focusing on Generative AI/ML & Data Solutions. With more than a decade of experience in the technology industry. He has a passion to transform enterprise organizations with Google Cloud. Prior to Google, He had helped fortune 500 companies to migrate to cloud across North America & Asia & UK regions. Lakshmanan's influence in AI extends to his contributions as a member of the Technical Advisory Board for AI/ML solutions at Packt and as a Technical Editor for AI publications. He is also serving on the Advisory Board for both the University of Colorado and University of California, Irvine.

DAY -III: 3<sup>RD</sup> TUESDAY, DECEMBER 2024

3<sup>rd</sup> Tuesday, December 2024, 9:45 – 10:45 (Asia/Bahrain)

KN6: Keynote Speaker-6

## SECURING THE VISUAL LANDSCAPE: IMAGE CRYPTOGRAPHY SOLUTIONS FOR SMART CITIES



Dr. Renjith V Ravi, FIETE, C.Eng (IE) Associate Professor, Electronics and Communication Engineering Chair, M.E.A Engineering College, Vengoor, Pattikkad PO, Malappuram, India

Session Chair: Dr. Neha Tyagi, Associate Professor, Department of Computer Science & Engineering, Amity School of Engineering & Technology, Amity University, Noida, India

[MAIN-THEATRE HALL – VIRTUAUL ACCESS](#)

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### TALK ABSTRACT

Abstract: It is very important to ensure the security of visual data which has become an integral part of smart cities. Images and videos collected through various sensors and cameras are critical for the smooth functioning of smart cities, such as security monitoring, traffic management, etc. However, this visual data may be vulnerable to unauthorized access, misuse and alteration. The science of image cryptography offers effective solutions to ensure the privacy and integrity of images and videos. This keynote speech explores the importance of image cryptography for securing visual data in smart cities. It discusses the benefits that can be achieved through image cryptography such as privacy protection, security against unauthorized exploitation, and assurance of data integrity. In addition, the lecture will present advanced image cryptography techniques that meet the specific needs of smart cities.

### SPEAKER DETAILS: DR. RENJITH V RAVI

Dr Renjith V Ravi is presently employed as Associate Professor and Head of the Department of Electronics and Communication Engineering and Institute level Coordinator of the Post Graduate Programmes at MEA Engineering College, Kerala, India. He possesses B.Tech. degree in Electronics and Communication Engineering in, M.E. degree in Embedded System Technology and Ph.D. in Electronics and Communication Engineering. He is a member of the panel of academic auditors of APJ Abdul Kalam Technological University, Kerala and had conducted external academic auditing in various affiliated institutions under the same University. He had published several research articles in SCIE and Scopus indexed journals, Edited books and international conferences inside and outside the country. He is an academy graduate and academy mentor in Web of Science and a certified peer reviewer from Elsevier Academy. He has been serving as a reviewer for various SCIE and Scopus indexed journals from IEEE, ACM, Springer, Elsevier, Taylor & Francis, IET, Inderscience, World Scientific, IOS Press De-Gruyter and IGI Global and completed more than 700 peer reviews in Web of Science. He has been published five edited books and currently editing one edited book from renowned international publishers. He got granted one patent, one industrial design and two copyrights. He had been awarded several outstanding achievement and outstanding service awards, and several best paper awards from international Conferences. He is a Fellow of IETE and member of IE, ISTE, CRSI, IACSIT, IAENG, SDIWC and senior member of SCIEI and SAISE and a chartered engineer certified by the Institution of Engineers (India). He has been served as the Program Committee member, Session Chair as well as reviewer of several National and International conferences conducted in India and abroad. His research areas include Image Cryptography, Image Processing, Machine Learning, Internet of Things Etc. He is currently focusing his research in the area of secure image communication using image cryptography.

DAY -III: TUESDAY, DECEMBER 3, PARALLEL SESSIONS



























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This is a free attendance event supported by the IET, for Symposium Registration, visit the IET Registration Platform

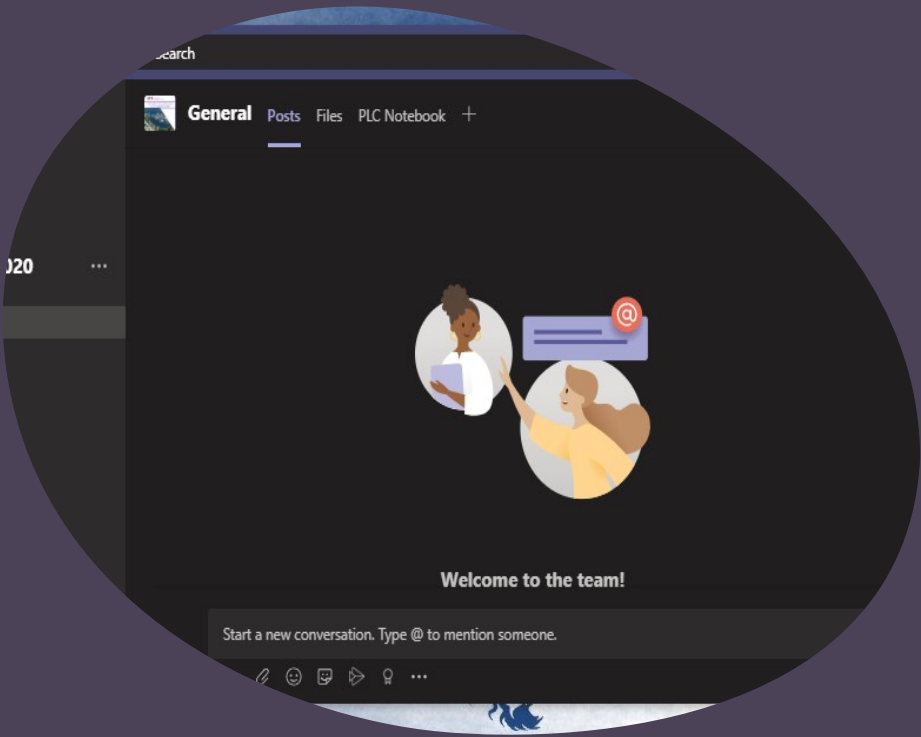
IET Registration Platform

<https://localevents.theiet.org/3f484d>

or at

<https://www.iet-smartcities-symposium.com/>

ACCESSING : 8<sup>TH</sup> SCS-2024 - HALLS, 1-3 DECEMBER 2024



To join sessions in Main Hall

[MAIN-THEATRE HALL – VIRTUAL ACCESS](#)

To join sessions in Hall-01:

[SESSION JOINING: HALL-01](#)

To join sessions in Hall-02

[SESSION JOINING: HALL-02](#)

To join sessions in Hall-03

[SESSION JOINING: HALL-03](#)

To join sessions in Hall-04

[SESSION JOINING: HALL-04](#)

To join sessions in Hall-05

[SESSION JOINING: HALL-05](#)



DAY-I

SUNDAY, 1<sup>ST</sup> DECEMBER 2024

Main-Hall Main Hall Opening by 8:30 am

9:00 am

MAIN-THEATRE HALL – VIRTUAL ACCESS

Opening Ceremony

OPENING SPEECH

SUNDAY 1<sup>ST</sup> DECEMBER 2024, 09:05+03 - 09:10+03

WELCOME: WELCOME SPEECH

THE SMART CITIES SYMPOSIUM : UOB Admin: University of Bahrain

SUNDAY THE 1<sup>ST</sup> OF DECEMBER 2024, 09:20+03 - 10:00+03

KN1: KEYNOTE SPEAKER -1

PRINTABLE SENSORS AND ENERGY HARVESTERS FOR SMART CITIES

Professor, Dr. Vincenzo Pecunia, Ph.D. Cantab., FIMMM, FIET, FInstP, SMIEEE, P.Eng.  
School of Sustainable Energy Engineering, Simon Fraser University, 10285 University Drive, Surrey, British Columbia V3T 0N1, Canada

Session Chair:

Dr. Suresh Vishwakarma, P.Eng., CEng, MIET, MBA, PhD, PostDoc, Honorary Professor, Amity University, India, IET-UK Representative for Western, Canada

KN2: KEYNOTE SPEAKER -2

THE CONVERGENCE OF ARTIFICIAL INTELLIGENCE, ELECTRIC VEHICLES, AND INDUSTRIAL TECHNOLOGY

Dr. Mrinal R Bachute

Associate Professor and Head of Industry Connect at Symbiosis Institute of Technology, Pune under Symbiosis International Pune, India

Session Chair:

Dr. Tagore Ramlal, University of Trinidad and Tobago, and Chair, IET Trinidad and Tobago LN. Trinidad

Sunday 1<sup>st</sup> December 2024: 11:00 +03 to 01:00 +03

Parallel Session: Hall-1  
SA01: Internet of Things and Smart Applications-PART-A  
SESSION JOINING: HALL-01

Parallel Session: Hall -2  
SA02: Artificial intelligence Computational Algorithms  
SESSION JOINING: HALL-02

Parallel Session: Hall-3  
SA03: Smart Environments -PART-A  
SESSION JOINING: HALL-03

13:00 +03 to 13:30 +03: ZB1: Day-1 - Mid-Day Break

Sunday 1<sup>st</sup> December 2024: 13:30 +03 to 16:30 +03

Parallel Session: Hall-1  
SB01: Smart Environments -PART-B  
SESSION JOINING: HALL-01

Parallel Session: Hall-2  
SB02: Cybersecurity Solutions  
SESSION JOINING: HALL-02

Parallel Session: Hall-3  
SB03: Smart Transportation System  
SESSION JOINING: HALL-03

Parallel Session: Hall-4  
SB04: Smart Cities Solutions  
SESSION JOINING: HALL-4

CD-1: Closing of Day-1

MONDAY, 2<sup>ND</sup> DECEMBER 2024

Main-Hall · Getting Ready: Main Hall Opening by 8:30 am

9:00 am

MAIN-THEATRE HALL – VIRTUAL ACCESS

KN4: KEYNOTE SPEAKER -2

MONDAY 2<sup>ND</sup> DECEMBER 2024, 09:00+03 - 09:30+03

ENHANCEMENT OF THE SMART CITY CONCEPT THROUGH A LOW-COST-ON-THE-ROAD-UNIT FOR TRAFFIC MANAGEMENT

Dr. Fotis Giannopoulos

Prisma Electronics S.A., HQ-Factory: 87 Demokratias Ave, 68 100, Alexandroupolis, Greece

Session Chair:

Dr. Anup Vibhute, Professor in E&TC Engg, Dr. D Y Patil Institute of Technology, Pune 411018, India

KN5: KEYNOTE SPEAKER-3

MONDAY 2<sup>ND</sup> DECEMBER 2024, 09:30+03 - 10:45+03

SMART CITIES IN SMALL ISLAND NATIONS: PAVING THE WAY TO GREEN SMALL ISLAND DEVELOPING STATES

Dr. Abdel Khoudaruth

CEng MEI RPEM MIE, Professor Sir Edouard Lim Fat Engineering Tower, University of Mauritius, Mauritius

Session Chair:

Dr. Victor Nagesparan, Assistant Professor, UCSI University, Malaysia

Monday 2<sup>nd</sup> December 2024: 10:30 +03 to 13:00 +03

Parallel Session: Hall-1  
SC02: Smart Algorithms Applications-A  
SESSION JOINING: HALL-01

Parallel Session: Hall-2  
SC03: New Technologies for Smart Cities-PART-A  
SESSION JOINING: HALL-02

Parallel Session: Hall-3  
SC04: New Technologies for Smart Cities-PART-D  
SESSION JOINING: HALL-03

13:00 +03 to 13:30 +03: ZB1: Day-1 - Mid-Day Break

Monday 2<sup>nd</sup> December 2024: 13:00 +03 to 15:15 +03

Parallel Session: Hall-1  
SD01: New Technologies for Smart Cities-PART-B  
SESSION JOINING: HALL-01

Parallel Session: Hall-2  
SD03: Smart Energy Systems – Technology Solutions  
SESSION JOINING: HALL-02

Parallel Session: Hall-3  
SD04: Smart Cities and AI Computational Algorithms  
SESSION JOINING: HALL-03

CD-2: Closing of Day-2

DAY-III

Tuesday, 3<sup>rd</sup> December 2024

Main-Hall: Getting Ready: Main Hall Opening by 8:30 am

9:00 am

MAIN-THEATRE HALL – VIRTUAL ACCESS

KN5: KEYNOTE SPEAKER -5

TUESDAY, 3<sup>RD</sup> DECEMBER 2024, 09:00+03 - 09:45+03

### RE-IMAGING SMART CITIES SEARCH APPLICATIONS WITH LLMS

Dr. Lakshmanan Sethu Sankaranarayanan,  
TAM - GenAI/AI & ML Solutions, Google USA, California, USA

Session Chair:

Ms. Shefali Vishwakarma, Member, IET - Communities Committee America, Simon Fraser University, Burnaby BC, Canada

KN6: KEYNOTE SPEAKER -6

TUESDAY, 3<sup>RD</sup> DECEMBER 2024, 09:45+03 - 10:25+03

### SECURING THE VISUAL LANDSCAPE: IMAGE CRYPTOGRAPHY SOLUTIONS FOR SMART CITIES

Dr. Renjith V Ravi, FIETE, C.Eng (IE) Associate Professor, Electronics and Communication Engineering Chair,  
M.E.A Engineering College, Vengoor, Pattikkad PO, Malappuram, India

Session Chair:

Dr. Neha Tyagi, Associate Professor, Department of Computer Science & Engineering, Amity School of Engineering & Technology, Amity University, Noida, India



Tuesday, 3 <sup>th</sup> December 2024: 10:30 +03 to 01:00 +03		
Parallel Session: Hall-1 SE02: Smart Monitoring and Solutions <u>SESSION JOINING: HALL-01</u>	Parallel Session: Hall-2 SE03: Smart Homes, Smart Hospitals, and Smart Campuses <u>SESSION JOINING: HALL-02</u>	Parallel Session: Hall-3 SE04: Robotics and Systems Intelligence <u>SESSION JOINING: HALL-03</u>
ZB-3: Mid-Day Break: 13:00 +03 to 13:30 +03		

Tuesday, 3 <sup>rd</sup> December 2024: 01:30 +03 to 15:30 +03			
Parallel Session: Hall-1 SF00: Smart Healthcare and Technology Solutions <u>SESSION JOINING: HALL-01</u>	Parallel Session: Hall-2 SF01: Internet of Things and Smart Applications-PART-B <u>SESSION JOINING: HALL-02</u>	Parallel Session: Hall-3 SF03: Design Solutions & Smart Cities Design-PART-B <u>SESSION JOINING: HALL-03</u>	Parallel Session: Hall-4 SF03: Design Solutions & Smart Cities Design-PART-C <u>SESSION JOINING: HALL-4</u>
Main-Hall: CD-3: Closing Remarks; 15:40 +03 to 16:00 +03			

<u>MAIN-THEATRE HALL – VIRTUAL ACCESS</u>
Closing Remarks of 8th IET SMART CITIES SYMPOSIUM, 2024 Session Chair: Dr. Archana Kanawde, PhD Associate Professor, Electronics & Telecommunication Engineering, Marathwada Mitra Mandal's College of Engineering
SB-3: Day-3 - Symposium Ending

