# 12th ACM International Conference on Nanoscale Computing and Communication （ACM NanoCom 2025）

**October 23-25, 2025**
**Chengdu, China**

**Conference Program**

# Welcome

On behalf of the conference committee, we warmly welcome you to the 12th ACM International Conference on Nanoscale Computing and Communication (ACM NanoCom 2025), to be held in Chengdu, China, on October 23 – 25, 2025.

Since its inception, ACM NanoCom has been dedicated to advancing research and development in nanoscale computing and communication, serving as a leading platform for researchers and practitioners worldwide.

Recent advances in nanotechnology have enabled the development of low-power, low-cost nanomachines equipped with sensing, actuation, and computing capabilities. While individual nanomachines have limited functions, their ability to communicate and form nanonetworks allows them to collaboratively perform complex tasks. This opens up new opportunities for applications in biomedicine, industry, and defense. The unique challenges at the nanoscale require novel theories and methods that go beyond traditional computing and communication paradigms.

The aim of ACM NanoCom 2025 is to raise the visibility of this rapidly growing research field and to bring together experts from multiple disciplines—including electrical engineering, computer science, biology, materials science, and nanotechnology—to explore new paradigms for nanoscale computing and communication.

We sincerely thank all committee members for their dedication and ACM for their invaluable support. Most importantly, we thank all speakers and participants for making this conference an inspiring and fruitful event. We wish you an informative and enjoyable stay in Chengdu.

General Chair
Professor Yifan Chen
The University of Electronic Science and Technology of China

Technical Program Committee Co-Chairs
Zhi Chen, University of Electronic Science and Technology of China, Chengdu, China
Yansha Deng, King's College London, United Kingdom
Chong Han, Shanghai Jiao Tong University, China
Lin Lin, Tongji University, China

# Organizing Committee

**General Chair**

Yifan Chen, University of Electronic Science and Technology of China, Chengdu, China

**Technical Program Committee Co-Chairs**

Zhi Chen, University of Electronic Science and Technology of China, Chengdu, China

Yansha Deng, King's College London, United Kingdom

Chong Han, Shanghai Jiao Tong University, China

Lin Lin, Tongji University, China

**Workshop on Terahertz Communications Chairs**

Weijun Gao, Shanghai Jiao Tong University, China

Chong Han, Shanghai Jiao Tong University, China

**Asia-Pacific Workshop on Molecular Communications Chairs**

Xuan Chen, Guangzhou University, China

Yu Huang, Guangzhou University, China

Miaowen Wen, South China University of Technology, China

**Publication Chair**

Nan Yang, Australian National University, Australia

**Publicity and Social Media Chair**

Maximilian Schäfer, Friedrich-Alexander University Erlangen-Nürnberg (FAU), Germany

Amit Sangwan, SUNY Polytechnic Institute, USA

**Finance Chair**

Arjun Singh, SUNY Polytechnic Institute, USA

**Local Organization Chair**

Yue Sun, Chengdu University of Technology, China

**Web Chair**

Karthik Reddy Gorla, Politecnico di Milano, Italy

**Steering Committee**

Sasitharan Balasubramaniam, University of Nebraska-Lincoln, USA

Laura Galluccio, University of Catania, Italy

Josep Miquel Jornet, Northeastern University, USA

Tadashi Nakano, Osaka University, Japan

Massimiliano Pierobon, University of Nebraska-Lincoln, USA

# Conference Program

| Day 0, Wednesday, October 22, 2025 | | |
|---|---|---|
| 14:00-20:00 | Registration | Crystal Orange Hotel (Ground Floor) |
| **Day 1, Thursday, October 23, 2025** | | |
| 08:30-09:00 | Conference Welcome | Baixue Lecture Hall |
| 09:00-10:00 | Keynote 1: The Future of Molecular Communication Research | Prof. Robert Schober<br>Institute for Digital Communications (IDC)<br>Baixue Lecture Hall |
| 10:00-10:30 | Refreshment Break | Outside Baixue Lecture Hall |
| 10:30-12:00 | Session 1: Molecular Communication Modulation and Optimization | Guangying Hall (Movie Room)<br>Session Chair: Miaowen Wen |
| 10:30-10:45 | Absorption Shift Keying in Molecular Communication: Optimized Channel Coding and Performance Analysis | Jingcan Chen; Liping Li<br>Anhui University<br>Miaowen Wen<br>South China University of Technology |
| 10:45-11:00 | Molecular Type Permutation Absorption Modulation | Yiting Zou; Zhanjun Hao; Yuankun Tang;<br>Northwest Normal University<br>Lei Zhang; Miaowen Wen<br>South China University of Technology |
| 11:00-11:15 | Machine Learning-Based Distance Estimation for Molecular Communication | Zhen Cheng; Jianlong Zheng; Ziyan Xu<br>Zhejiang University of Technology |
| 11:15-11:30 | Tradeoff Between Energy Consumption and BER Performance in Molecular Communications | Dongliang Jing; Hao Zhou;<br>Linjuan Li<br>Northwest A&F University<br>Andrew Eckford<br>York University |
| 11:30-11:45 | Enhanced Calcium signaling-based Molecular Communications with relaying and chemotaxis | Peng He; Chao Wang; Yaping Cui;<br>Dapeng Wu; Ruyan Wang; Mengnan Su<br>Chongqing University of Posts and Telecommunications<br>Yue Sun<br>Chengdu University of Technology |
| 12:15-13:30 | Lunch (75min) | Taoyuan Canteen |
| 13:30-14:45 | Session 2: Modulation and Channel Modeling in Molecular Communication | Guangying Hall (Movie Room)<br>Session Chair: Qiang Liu |
| 13:30-13:45 | A Linear High-Order Concentration Modulation(LHOCM) Scheme in Molecular Communication | Guodong Yue; Qiang Liu<br>University of Electronic Science and Technology of China<br>Kun Yang<br>Nanjing University |

| 13:45-14:00 | Channel modeling of multiple reversible reaction receiver | Zhuo Sun<br>Jiangsu University, Jilin Normal University<br>Xu Bao<br>Jiangsu University |
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| 14:00-14:15 | Identification for Molecular Communication Based on Diffusion Channel with Poisson Reception Process | Yaning Zhao; Luca Miszewski; Christian Deppe<br>Technische Universität Braunschweig<br>Massimiliano Pierobon<br>University of Nebraska-Lincoln |
| 14:15-14:30 | Molecule Mixture Detection and Alphabet Design for Non-linear, Cross-reactive Receiver Arrays in MC | Bastian Heinlein; Kaikai Zhu; Sümeyye Carkit-Yilmaz; Sebastian Lotter; Helene M. Loos; Andrea Buettner; Robert Schober<br>Friedrich-Alexander-Universität Erlangen-Nürnberg<br>Yansha Deng<br>King's College London<br>Vahid Jamali<br>Technical University of Darmstadt |
| 14:30-14:45 | Closed-Loop Molecular Communication with Local and Global Degradation: Modeling and ISI Analysis | Lukas Brand; Fardad Vakilipoor; Sören Botsch; Timo Jakumeit; Sebastian Lotter; Robert Schober; Maximilian Schäfer<br>Friedrich-Alexander-Universität Erlangen-Nürnberg |
| **14:45-15:15** | **Invited Talk 1: Terahertz Beam Engineering: A New Quality Productive Force** | **Chong Han**<br>**Terahertz Wireless Communications (TWC)**<br>**Laboratory**<br>**Shanghai Jiao Tong University**<br>**Guangying Hall (Movie Room)** |
| **15:15-16:45** | **Poster Session 1 (with Refreshment Break)** | **Outside Baixue Lecture Hall** |
| 15:15-16:45 | Integrated Sensing and Communication via Molecular Signaling | Haoxin Yao; Miaowen Wen<br>South China University of Technology<br>Yu Huang; Xuan Chen<br>Guangzhou University |
| 15:15-16:45 | MEHLISSA 2.0: Accelerating Full-body Molecular Communication Simulations | Lisa Y. Debus; Falko Dressler<br>Technische Universität Berlin<br>Regine Wendt; Stefan Fischer<br>Universität zu Lübeck |
| 15:15-16:45 | A CPU – GPU Hybrid Boundary-Based Algorithm for Accelerating Cellular Potts Model Simulations | Jiewen Wang; Tadashi Nakano<br>Osaka Metropolitan University |
| 15:15-16:45 | Toward Controlling a Cyber-Physical System using Synthetic Biological Intelligence | Pit Hofmann; Ruifeng Zheng;<br>Pengjie Zhou; Juan A. Cabrera;<br>Frank H. P. Fitzek<br>Deutsche Telekom Chair of Communication Networks<br>TU Dresden<br>Alon Loeffler; Candice Desouza; Brett J. Kagan;<br>Cortical Labs |

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| 15:15-16:45 | Airborne Molecular Communication Using MOS Sensors under Controlled Airflow | Kaikai Zhu; Sümeyye Carkit-Yilmaz; Bastian Heinlein; Robert Schober; Andrea Buettner; Helene M. Loos<br>Friedrich-Alexander-Universität Erlangen-Nürnberg<br>Vahid Jamali<br>TU Darmstadt |
| 15:15-16:45 | Channel Modeling for Reflector-Assisted Molecular Communications | Jianfeng Sun; Ziyang Qi<br>Anhui Normal University<br>Hui Li<br>University of Science and Technology of China |
| 15:15-16:45 | From Lab to Gut: Engineering a Yeast Biosensor for Real-Time Molecular Communication | Nikolaos Ntetsikas; Marios Lestas<br>Frederick University<br>Styliana Kyriakoudi; Antonis Kirmizis<br>University of Cyprus<br>Ian F. Akyildiz<br>Truva Inc. |
| 15:15-16:45 | Experimental Analysis of Surface-induced Molecular Adsorption in Static Airborne Molecular Communication Environments | Sümeyye Carkit-Yilmaz; Kaikai Zhu; Bastian Heinlein; Robert Schober; Helene M. Loos; Andrea Buettner<br>Friedrich-Alexander-Universität Erlangen-Nürnberg<br>Vahid Jamali<br>TU Darmstadt |
| **16:45-18:00** | **Visit the Electronic Science and Technology Museum** | **Electronic Science and Technology Museum** |
| **18:00-20:00** | **Welcome Dinner** | **Tonghu Yuan Xinyuan Restaurant** |
| **Day 2, Friday, October 24, 2025** | | |
| **09:30-10:00** | **Invited Talk 2: Artificial molecular communication network based on DNA nanostructures recognition** | **Jie Chao**<br>**Nanjing University of Posts & Telecommunications**<br>**Tianyun Hall (Music Room)** |
| **10:00-10:30** | **Refreshment Break** | **Outside Baixue Lecture Hall** |
| **10:30-12:00** | **Session 3: AI and Intelligent Methods in Molecular Communication** | **Tianyun Hall (Music Room)**<br>**Session Chair: Dadi Bi** |
| 10:30-10:45 | Breath Patterns as Signals: A Machine Learning-based Molecular Communication Perspective | Sunasheer Bhattacharjee; Saswati Pal; Péter Scheepers; Falko Dressler<br>School of Engineering and Computer Science<br>Technical University of Berlin |
| 10:45-11:00 | Neural Network based Distance Estimation for Branched Molecular Communication Systems | Martin Schottlender; Ricardo A. Veiga<br>Universidad de Buenos Aires<br>Maximilian Schäfer<br>Friedrich-Alexander Universität Erlangen-Nürnberg |

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| 11:00-11:15 | Set Transformer Architectures and Synthetic Data Generation for Flow-Guided Nanoscale Localization | Mika Leo Hube<br>Polytechnic University of Catalonia<br>Filip Lemic; Gerard Calvo Bartra<br>AI-driven Systems Lab of the i2Cat Foundation<br>Ethungshan Shitiri; Sergi Abadal<br>Universitat Politècnica de Catalunya<br>Xavier Costa Pérez<br>NEC Laboratories Europe |
| 11:15-11:30 | Localization of an Unintended Receiver in Molecular Communication via Diffusion | Wenzhuo Wu; Xuan Chen; Jingyang Li; Gaofei Huang; Yu Huang<br>Guangzhou University<br>Miaowen Wen<br>South China University of Technology |
| 11:30-11:45 | Accelerating Computation in Molecular Nano Neural Networks Using Non-Ideal Chemical Reaction Dynamics | Giuseppe Stefano Basile; Nunzio Tuccitto<br>University of Catania<br>Michael Grattringer; Werner Haselmayr; Stefan Angerbauer<br>Johannes Kepler University Linz |
| **12:15-13:30** | **Lunch (75min)** | **Taoyuan Canteen** |
| **13:30-14:45** | **Session 4: System Design and Network Implementation in Molecular Communication** | **Tianyun Hall (Music Room)**<br>**Session Chair: Yue Sun** |
| 13:30-13:45 | Entropy-driven Effective Tumor Detection using Nanoscale Medical Agents | Bahram Hedayati; Karthik Reddy Gorla; Maurizio Magarini<br>Politecnico di Milano |
| 13:45-14:00 | Experimental Validation of a Vagal-Gastrointestinal Axis Communication Link in Rabbits | Zhao Leyi; Jia Xinyao; Qin Ying; Huang Zhi; Zou Wenshan; Lin Lin<br>Tongji University |
| 14:00-14:15 | In Vivo Molecular Communication through Synthetic Biology: A Case Study | Rinrada Jadsadaphongphaibool;<br>Dadi Bi; Yansha Deng<br>King's College London<br>Robert Schober<br>Friedrich-Alexander-University Erlangen-Nuernberg<br>Javier Macia Santamaria<br>Pompeu Fabra University |
| 14:15-14:30 | Synthetic MC via Biological Transmitters: Therapeutic Modulation of the Gut-Brain Axis | Sebastian Lotter; Elisabeth Mohr; Lukas Brand<br>Friedrich-Alexander-Universität Erlangen-Nürnberg<br>Andrina Rutsch; Francesca Ronchi; Laura Díaz-Marugán<br>Charité – Universitätsmedizin Berlin, Humboldt-Universität zu Berlin, Berlin Institute of Health (BIH) |

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| 14:30-14:45 | Oxygen Gradient Simulation in Tumor Microenvironments: A Bio-realistic Model for Computational Nanobiosensing | Qingqing Yang; Zan Chen; Yue Sun; Yifan Chen<br>University of Electronic Science and Technology of China<br>Peng He<br>Chongqing University of Posts and Telecommunications |
| 14:45-15:15 | **Refreshment Break** | **Outside Baixue Lecture Hall** |
| 15:15-16:45 | **Lab visit** | **Comprehensive Building** |
| 18:00-20:00 | **Banquet Dinner** | **Daqian Riverside Restaurant** |
| **Day 3, Saturday, October 25, 2025** | | |
| 09:00-10:30 | **Session 5: System and Network Implementation In Molecular Communication** | **Tianyun Hall (Music Room)**<br>**Session Chair: Maximilian Schäfer** |
| 09:00-09:15 | Galvanic Coupling Channel Characterization for Wearable Devices | Chiara Cavigliano; Silvia Mura; Maurizio Magarini<br>Politecnico di Milano<br>Anna Vizziello; Pietro Savazzi<br>University of Pavia |
| 09:15-09:30 | Modeling the Microfluidic Interaction Channel for DNA-Based Molecular Communication Experiments | Alexander Wietfeld; Alexandra Bienau; Friedrich C. Simmel; Wolfgang Kellerer; Alexander Wietfeld<br>Technical University of Munich |
| 09:30-09:45 | Distributed TDMA Scheduling for Diffusion-based Molecular Communication Networks | Michael Gattringer; Stefan Angerbauer; Andreas Springer; Werner Haselmayr<br>Johannes Kepler University Linz |
| 09:45-10:00 | Sentry-Weave Interleaved Code for Track Hopper-Based DNA Molecular Communication | Quanhong Yu; Yue Sun; Jinyan Fu; Qingwen Wang<br>Chengdu University of Technology<br>Peng He<br>Chongqing University of Posts and Telecommunications<br>Yifan Chen<br>University of Electronic Science and Technology of China |
| 10:00-10:15 | MC for Agriculture: A Framework for Nature-inspired Sustainable Pest Control | Fardad Vakilipoor; Nora Hirschmann; Stefan Schwab; Robert Schober; Kathrin Castiglione; Maximilian Schäfer<br>Friedrich-Alexander-Universität Erlangen-Nürnberg<br>Julian Schladt; Annette Reineke<br>Hochschule Geisenheim University |
| 10:30-12:00 | **Poster Session 2 (with Refreshment Break)** | **Outside Baixue Lecture Hall** |
| 10:30-12:00 | Node Position Estimation in Diffusion-Based Molecular Communications Using Multi-Layer Perceptron | Sangjun Hwang; Chan-Byoung Chae<br>Yonsei University |

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| 10:30-12:00 | Programmable Metabolic Disruption in Yeast Cells via Targeted Terahertz Excitation of Enzymes | Jorge Torres Gomez; Falko Dressler<br>TU Berlin<br>Alam Tauqeer Mohammad<br>Biology Department, United Arab Emirates University<br>Markus Ralser<br>Charité - Universität smedizin Berlin |
| 10:30-12:00 | Research on A Molecular Communication Testbed for Respiratory Virus Droplet Transmission | Pengfei Zhang; Yusheng Sun;<br>Pengfei Lu<br>Shihezi Univeristy |
| 10:30-12:00 | Toward an Information-Theoretic Model of Neuron-Microglia Communication | Yaning Zhao; Kristen Michaelsen-Preusse; Martin Korte; Christian Deppe<br>Technische Universität Braunschweig |
| 10:30-12:00 | Signal Detector for MIMO Molecular Communication Based on the Mamba Model | Cheng Xiang; Yu Huang; Weiqiang Tan; Jun Li<br>Guangzhou University |
| 10:30-12:00 | Effect of the Injection Design on Drug Targeting in Molecular Communication | Luiz Wille; Keyu Xiao; Jens Kirchner<br>Friedrich-Alexander-Universität Erlangen-Nürnberg |
| 10:30-12:00 | Molecular communication modeling channel using enzymatic signal generation: Analysis of hydrogen peroxide | Viviana Lorena Robalino Espinoza; Leyi Zhao; Muhammad Usman Riaz; Lin Lin;<br>Tongji University |
| 10:30-12:00 | Simulation and Experimental Validation of Agglomerate Size Distribution in Ferrofluid | Keyu Xiao; Luiz Wille; Angelika Thalmayer; Jens Kirchner; Georg Fischer<br>Friedrich-Alexander-Universität Erlangen-Nürnberg |
| 10:30-12:00 | Transmitter Performance Comparison Under Given Energy | Dongliang Jing; Linjuan Li; Liang Zhao; Liang Zhao<br>Northwest A&F University |
| **12:00-12:30** | **Closing and Awards Ceremony** | **Tianyun Hall (Music Room)** |
| **12:30-13:45** | **Lunch (75min)** | **Taoyuan Canteen** |
| **13:45-18:00** | **Guided Tour of the Jinsha Site Museum (Optional)** | **Jinsha Site Museum** |

# Keynote Speaker

# The Future of Molecular Communication Research

**Robert Schober**

**Professor**
**Department of Electrical-Electronic-Communication Engineering**
**Institute for Digital Communications (IDC)**

Over the past two decades, synthetic molecular communications (MC) has emerged as a new field of research in information theory and communication engineering with strong links to several other disciplines, including biology, nanotechnology, and medicine. MC is expected to provide connectivity in environments that are not suitable for conventional communication systems based on electromagnetic waves, such as the human cardiovascular system, bioprocesses, and water pipes, and facilitate novel applications such as the Internet of BioNanoThings (IoBNT), targeted drug delivery, and interfacing with animals and plants.

While much of the ground-breaking initial research was theoretical and "blue sky", now the time has come for application-motivated theoretical and experimental research. This paradigm shift requires interdisciplinary collaboration between experts from different fields and corresponding concepts for graduate student training.

In this talk, we will outline our vision for the future of MC research and education. To this end, two large-scale research projects on synthetic MC that were recently funded in Germany will be presented. These interdisciplinary projects feature a tight integration of theoretical and experimental research, dedicated graduate student training concepts, and concrete application scenarios. To substantiate the proposed vision, exemplary results targeting bioprocess engineering, targeted drug delivery, and pest control will be presented.

It is hoped that the talk will motivate the pursuit of application-oriented MC research and provide ideas for corresponding grant applications.

Short Biography
Robert Schober (Fellow, IEEE) received the Diploma and Ph.D. degrees in electrical engineering from the Friedrich-Alexander University of Erlangen-Nuremberg (FAU), Germany, in 1997 and 2000, respectively.

From 2002 to 2011, he was a Professor and a Canada Research Chair with the University of British

Columbia, Vancouver, Canada. Since January 2012, he has been an Alexander von Humboldt Professor and the Chair for Digital Communication with FAU. His research interests fall into the broad areas of communication theory, wireless and molecular communications, and statistical signal processing.

Prof. Schober received several awards for his work including the 2002 Heinz Maier Leibnitz Award of the German Science Foundation, the 2004 Innovations Award of the Vodafone Foundation for Research in Mobile Communications, the 2006 UBC Killam Research Prize, the 2007 Wilhelm Friedrich Bessel Research Award of the Alexander von Humboldt Foundation, the 2008 Charles McDowell Award for Excellence in Research from UBC, the 2011 Alexander von Humboldt Professorship, the 2012 NSERC E.W.R. Stacie Fellowship, the 2017 Wireless Communications Recognition Award by the IEEE Wireless Communications Technical Committee, the 2021 ACM NanoCom Milestone Award, the 2022 IEEE Vehicular Technology Society Stuart F. Meyer Memorial Award, and a Honorary Doctorate from Aristotle University of Thessaloniki, Greece, in 2024. Furthermore, he received numerous Best Paper Awards for his work including the 2022 ComSoc Stephen O. Rice Prize and the 2023 ComSoc Leonard G. Abraham Prize. Since 2017, he has been listed as a Highly Cited Researcher by the Web of Science. He is a Fellow of the Canadian Academy of Engineering and the Engineering Institute of Canada, a member of the European Academy of Sciences and Arts, Academia Europaea, the German National Academy of Science and Engineering (acatech), and the German National Academy of Sciences (Leopoldina). He served as an Editor-in-Chief for the IEEE Transactions on Communications, VP Publications of the IEEE Communication Society (ComSoc), ComSoc Member at Large, and ComSoc Treasurer. He currently serves as a Senior Editor for Proceedings of the IEEE and as a ComSoc President.

# Invited Talk 1

# Terahertz Beam Engineering: A New Quality Productive Force

**Chong Han**

**John Wu & Jane Sun Endowed Associate Professor Terahertz Wireless Communications (TWC) Laboratory University of Michigan-Shanghai Jiao Tong University (UM-SJTU) Joint Institute Shanghai Jiao Tong University**

Terahertz (THz) communications is envisioned as a highly promising wireless technology for the sixth generation (6G) and beyond wireless networks. In particular, the ultra-wide THz band ranging from 0.1 to 10 THz offers enormous potential to alleviate the spectrum scarcity and break the capacity limitation of emerging wireless systems. This will undoubtedly support the epoch-making wireless applications that demand ultra-high quality of service requirements and multi-terabits per second data transmission in the 6G and beyond era, such as metaverse and extended reality, terabit-per-second backhaul systems, and wireless high-bandwidth satellite communications. This talk will touch a frontier of Terahertz beam engineering, including Bessel, Airy, OAM, etc. As a new quality productive force, this cross near and far field communication regime is believed to reap the full benefits of THz communications in the 6G and beyond era.

Short Biography
Chong Han received Ph.D. degree from Georgia Institute of Technology, USA in 2016. He is currently a John Wu & Jane Sun Endowed Associate Professor with Shanghai Jiao Tong University, China, and director of the Terahertz Wireless Communications (TWC) Laboratory. He is a co-founder and vice-chair of IEEE ComSoc Special Interest Group (SIG) on Terahertz Communications, since 2021. He is the recipient of 2024 IEEE ComSoc RCC Early Achievement Award, 2024 Bessel Research Award from Alexander von Humboldt Foundation in Germany, 2023 IEEE ComSoc Asia-Pacific Outstanding Young Researcher Award, among others. He is a (guest) editor with IEEE Trans. Wireless Communications, IEEE JSAC, etc.

# Invited Talk 2

# Artificial Molecular Communication Network based on DNA Nanostructures Recognition

**Jie Chao**

**Professor**
**State Key Laboratory of Flexible Electronics (LoFE) & Institute of Advanced Materials (IAM) Nanjing University of Posts & Telecommunications**

Artificial simulated communication networks inspired by molecular communication in organisms use biological and chemical molecules as information carriers to realize information transmission. However, the design of programmable, multiplexed and general simulation models remains challenging. Here, we develop a DNA nanostructure recognition-based artificial molecular communication network (DR-AMCN), in which rectangular DNA origami nanostructures serve as nodes and their recognition as edges. After the implementation of DR-AMCN with various communication mechanisms including serial, parallel, orthogonal, and multiplexing, it is applied to construct various communication network topologies with bus, star, and tree structures. By the establishment of a node partition algorithm for path traversal based on DR-AMCN, the computational complexity of the seven-node Hamiltonian path problem is reduced and solved directly by a rate-zonal centrifugation method. The developed DR-AMCN enhances our understanding of signal transduction mechanisms, dynamic processes, and regulatory networks in organisms, contributing to the solution of informatics and computational problems, as well as having immense potential in computer science, biomedical engineering, information technology and other related fields.

Short Biography
Jie Chao received her Ph.D. from Nanjing University in 2008. In 2006-2007, she was a visiting student in Prof. Seeman's laboratory at New York University. After her postdoctoral research at Nanjing University, she joined the Shanghai Institute of Applied Physics (SINAP) in 2011 as an associate professor. In 2014, she moved to Nanjing University of Post & Telecommunications as a professor. Her research interests focus on DNA assembly and bioapplications. So far she has more than 150 journal publications, including Nature, Nature Materials, Nature Chemistry, Nature Communications, Advanced Materials, and Journal of the American Chemical Society.

# Conference Venues and Shuttle Bus
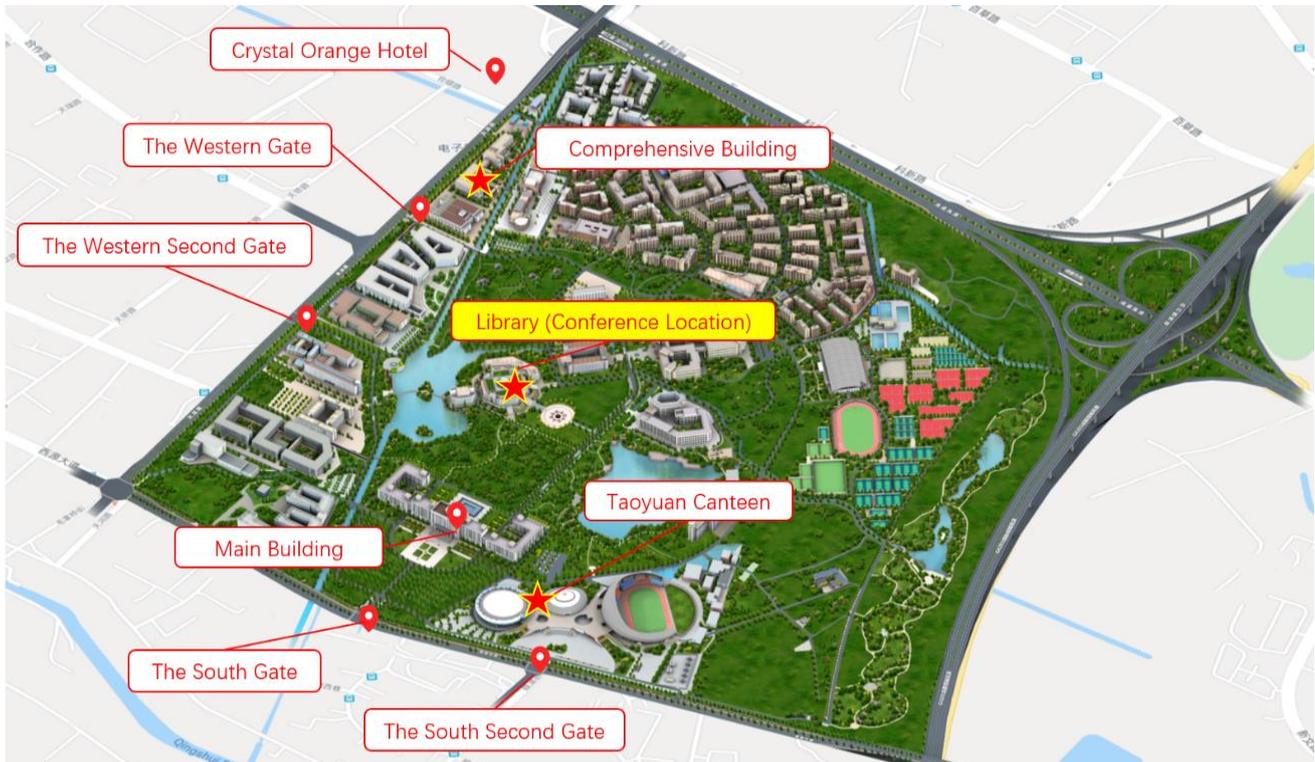


★ **1：Conference Location**

University of Electronic Science and Technology of China(UESTC), Qingshuihe Campus, Library

2006 Xiyuan Avenue, West High-Tech Zone, Chengdu, Sichuan

电子科技大学清水河校区图书馆

四川省成都市高新西区西源大道 2006 号

★ **2：Lunch**

Taoyuan Canteen 桃园餐厅

★ **3：Lab Visit**

Comprehensive Building 综合楼

## Local Contacts

Zheng Gong 宫正 185 0306 7521

Yue Sun 孙玥 136 4803 5596

Zan Chen 陈赞 187 8226 0266

## Shuttle Bus

| Date | Departure Time | Pick-up Location | Drop-off Location |
|---|---|---|---|
| Day 1, October 23 | 7:50 AM | Crystal Orange Hotel | Library |
| | 12:00 PM | Library | Taoyuan Canteen |
| | 13:10 PM | Taoyuan Canteen | Library |
| | 17:50 PM | Electronic Science and Technology Museum | Tonghu Yuan Xinyuan Restaurant |
| | 19:30 PM | Tonghu Yuan Xinyuan Restaurant | Crystal Orange Hotel |
| Day 2, October 24 | 09:00 AM | Crystal Orange Hotel | Library |
| | 12:00 PM | Library | Taoyuan Canteen |
| | 13:10 PM | Taoyuan Canteen | Library |
| | 15:15 PM | Library | Comprehensive Building |
| | 16:40 PM | Comprehensive Building | Crystal Orange Hotel |
| | 17:40 PM | Crystal Orange Hotel | Daqian Riverside Restauran |
| | 19:30 PM | Daqian Riverside Restauran | Crystal Orange Hotel |
| Day 3, October 25 | 08:30 AM | Crystal Orange Hotel | Library |
| | 12:30 PM | Library | Taoyuan Canteen |
| | 13:45 PM | Taoyuan Canteen | Jinsha Site Museum |
| | 17:00 PM | Jinsha Site Museum | Crystal Orange Hotel |