

# 第五届中国传感器网络学术会议

The Fifth China Wireless Sensor  
Network Conference

## 程 序 册



清华大学  
Tsinghua University



交叉信息研究院  
Institute for Interdisciplinary  
Information Sciences



中国科学院软件研究所  
Institute of Software Chinese Academy of Sciences

中国 北京

2011年9月26日-27日

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# 第五届中国传感器网络学术会议

## 组织机构名单

主办单位	中国计算机学会	
协办单位	中国计算机学会传感器网络专业委员会	
承办单位	清华大学交叉信息院 中科院软件所	
会议主席	姚期智	2000年图灵奖得主 美国科学院院士 美国科学与艺术学院院士 中国科学院外籍院士
	戴浩	中国工程院院士
程序委员会主席	王跃宣	清华大学
	李建中	哈尔滨工业大学
	孙利民	中科院软件所
评奖委员会	王雪	清华大学
	崔莉	中科院计算所
	马建	诺基亚研究中心
	陈贵海	南京大学
宣传主席	刘云浩	香港科技大学
	李向阳	伊利诺斯理工学院
演示环节主席	王永才	清华大学

## 程序委员会委员（按姓氏音序）

鲍 明 卜佳俊 曹建农 陈灿峰 陈 红 陈贵海 陈力军  
陈 晰 陈晓江 崔 莉 邓志东 丁 嵘 樊 勇 房鼎益  
高德云 高 宏 郭忠文 黄刘生 蒋文斌 蒋巍川 景 博  
李德英 李方敏 李光辉 李建中 李金宝 李 平 李士宁  
李明禄 李文锋 郇 辉 梁久祯 梁 韡 林亚平 刘 明  
刘云浩 柳 翔 龙昭华 罗 娟 马 建 马华东 马建峰  
倪明选 牛建伟 牛晓光 裴庆祺 彭 力 钱德沛 任丰原  
沈 杰 舒 坚 宋光明 苏金树 孙利民 唐碧华 王福豹  
王 雷 王 平 王 沁 王汝传 王晓东 王 雪 王跃宣  
汪 炆 王 智 吴行军 伍民友 肖德琴 熊永平 徐志伟  
薛广涛 杨晓春 杨 庚 杨卫东 易卫东 于宏毅 曾 宇  
周水庚 周 正 朱红松 朱燕民 朱艺华 赵增华

## 组织委员会主席

华强胜 朱红松

## 组织委员会委员

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王艳萍 刘 婧 张 燕 孙 迪 刘妍君 齐 韬 李立群

# The Fifth China Wireless Sensor Network Conference (CWSN2011)

Host: China Computer Federation

Co-host: China Computer Federation Technical Committee on Sensor Network

Organizers: Institute for Interdisciplinary Information Sciences, Tsinghua University; Institute of Software, Chinese Academy of Sciences

General Chairs: Andrew Chih-Chi Yao (2000 Turing Award Winner, Member of US National Academy of Sciences, Member of American Academy of Arts and Sciences, Foreign Member of Chinese Academy of Sciences)  
Hao Dai (Member of Chinese Academy of Engineering)

Co-chairs: Yuexuan Wang Tsinghua University  
Jianzhong Li Harbin Institute of Technology  
Limin Sun Institute of Software, Chinese Academy of Sciences

Awards Committee: Xue Wang Tsinghua University  
Li Cui Institute of Computing Technology, Chinese Academy of Sciences  
Jian Ma NOKIA Research Center BEIJING  
Guihai Chen Nanjing University

Publicity Chairs: Yunhao Liu The Hong Kong University of Science and Technology  
Xiangyang Li Illinois Institute of Technology

Demo Chair: Yongcai Wang Tsinghua University

## **Program Committee**

Ming Bao, Jiajun Bu, Jiannong Cao, Chanfeng Chen, Hong Chen, Guihai Chen, Lijun Chen, Xi Chen, Xiaojiang Chen, Li Cui, Zhidong Deng, Rong Ding, Yong Fan, Dingyi Fang, Deyun Gao, Hong Gao, Zhongwen Guo, Liusheng Huang, Wenbin Jiang, Yichuan Jiang, Bo Jing, Deying Li, Fangmin Li, Guanghui Li, Jianzhong Li, Jinbao Li, Ping Li, Shining Li, Minglu Li, Wenfeng Li, Hui Li, Jiuzhen Liang, Wei Liang, Yaping Lin, Ming Liu, Yunhao Liu, Xiang Liu, Zhaohua Long, Juan Luo, Jian Ma, Huadong Ma, Jianfeng Ma, Mingxuan Ni, Jianwei Niu, Xiaoguang Niu, Qingqi Pei, Li Peng, Depei Qian, Fengyuan Ren, Jie Shen, Jian Shu, Guangming Song, Jinshu Su, Limin Sun, Bihua Tang, Fubao Wang, Lei Wang, Ping Wang, Qin Wang, Ruchuan Wang, Xiaodong Wang, Xue Wang, Yuexuan Wang, Yang Wang, Zhi Wang, Xingjun Wu, Minyou Wu, Deqin Xiao, Yongping Xiong, Zhiwei Xu, Guangtao Xue, Xiaochun Yang, Geng Yang, Weidong Yang, Weidong Yi, Hongyi Yu, Yu Zeng, Shuigeng Zhou, Zheng Zhou, Yanmin Zhu, Yihua Zhu, Zenghua Zhao

## **Organizing Committee**

Chair: Qiangsheng Hua , Hongsong Zhu

Organizing Committee: Qiangsheng Hua, Hongsong Zhu, Meizhi Hu, Yuying Chang, Xiamin Lv, Xiang Li, Yang Zhao, Haisheng Liang, Mengting Song, Yanping Wang, Jing Liu, Yan Zhang, Di Sun, Yanjun Liu, Tao Qi, Liqun Li

## 前 言

由中国计算机学会主办的全国传感器网络学术会议 (CWSN) 为传感器网络领域的研究人员交流最新成果提供了一个很好的平台, 经过传感器网络同仁多年的努力, 已逐步成为在国内外华人学术圈具有一定影响力的传感器网络学术会议。

第五届中国传感器网络学术会议 (CWSN2011) 于 2011 年 9 月 26 日至 9 月 27 日在北京国家会议中心召开。本次会议由中国计算机学会主办, 中国计算机学会传感器网络专业委员会协办, 清华大学和中科院软件所联合承办。

CWSN2011 旨在为国内无线传感器网络研究者、开发者和用户提供一个传感器网络论坛, 促进无线传感器网络理论与应用研究的交流, 探讨传感器网络研究与应用所面临的关键性挑战问题和研究方向。大会共收到投稿论文 196 篇, 录用论文 124 篇, 其中经审稿人推荐, 选取 60 篇推荐到《计算机研究与发展》正刊、《仪器仪表学报》正刊、《软件学报》增刊、Ad Hoc & Sensor Wireless Networks 和 International Journal of Sensor Networks (IJSNet) 发表, 64 篇刊登于《计算机研究与发展》增刊专刊发表。全部论文录取率约为 63%。本次会议录用的论文基本反映了我国传感器网络界跟踪国际前沿的研究成果, 论文集内容涉及无线传感器网络节点系统的理论和技术; 无线传感器网络的基础设施的理论和技术; 无线传感器网络通信协议的理论和技术; 无线传感器网络数据管理和中间件的理论和技术; 无线传感器网络软件开



发、测试与调试工具以及模拟环境;移动传感器网络的相关技术;CPS;物联网;无线传感器网络应用系统等研究方向。

本届大会在筹备过程中,得到了传感器网络专委会的精心指导和传感器网络同仁的大力支持。来自清华大学、北京大学、香港科技大学、香港理工大学、南京大学、浙江大学、中科院软件所、中科院计算所、中国人民大学、武汉大学、湖南大学、哈尔滨工业大学、北京邮电大学、复旦大学、天津大学、上海交通大学等 50 余所高校的 80 余位专家对大会论文进行了严格评审。同时,本届大会还得到来自百度、微软、西门子、美新半导体、天津视讯、时代凌宇、北京计算中心、美信凌科、恒诺科技、同方微电子等企业的鼎力赞助。在论文集出版之际,我们谨向全部投稿作者、评审专家、与会代表、赞助单位以及所有为 CWSN2011 付出辛勤劳动的朋友们表示衷心的感谢。在此,我们也感谢《计算机研究与发展》、《仪器仪表学报》、《软件学报》、《Ad Hoc & Sensor Wireless Networks》和《International Journal of Sensor Networks》等编辑部对大会的信任与支持,特别感谢他们为本次大会论文的出版工作所付出的辛勤劳动。

CWSN2011 程序委员会主席

王跃宣 李建中 孙利民

2011 年 9 月

# Foreword

China Wireless Sensor Network Conference (CWSN), hosted by China Computer Federation, provides a forum of sensor network for the researchers in this field to present and exchange their latest results. CWSN now enjoys a high reputation in Chinese academic circles home and abroad through years' efforts.

The Fifth China Wireless Sensor Network Conference (CWSN2011) is held on September 26-27, 2011 at China National Convention Center. The conference is hosted by China Computer Federation, Co-hosted by China Computer Federation Technical Committee on Sensor Network, and organized by Tsinghua University and Institute of Software of Chinese Academy of Sciences.

CWSN2011 aims to provide a forum of sensor network for the researchers in this field home and abroad; promote the exchanges on the theory and application of wireless sensor network and probe into the typical challenging problem and research on sensor network. 124 were selected out of 196 submitted papers, among which 60 papers were recommended to *Journal of Computer Research and Development*, *Journal of Instrument and Control*, an exclusive supplement to *Journal of Software*, *Ad Hoc & Sensor Wireless Networks*, and *International Journal of Sensor Networks (IJSNet)* while the other 64 papers published in a supplement to *Journal of Computer Research and Development*. The total acceptance rate reaches 63%. The submissions represent the latest results in following the international research in wireless sensor network, and cover the topics including the theory and technology of wireless sensor network node system, theory and technology of infrastructure for wireless sensor network, theory and technology of communication protocol for wireless sensor networks, theory and technology of wireless sensor network data management and middleware, software development, testing and debugging tools, and simulation environment of wireless sensor network, technologies related to mobile sensor networks, CPS,

internet of things, and wireless sensor network applications, etc.

CWSN2011 received great support from China Computer Federation Technical Committee on Sensor Network and the peers in sensor network. All the papers were reviewed by more than 80 experts on Program Committee from over 50 universities including Tsinghua University, Beijing University, the Hong Kong University of Science and Technology, the Hong Kong Polytechnic University, Nanjing University, Zhejiang University, Institute of Software of Chinese Academy of Sciences, Institute of Computing Technology, Chinese Academy of Sciences, Renmin University of China, Wuhan University, Hunan University, Harbin Institute of Technology, Beijing University of Posts and Telecommunications, Fudan University, Tianjin University, Shanghai Jiao Tong University, etc. The conference was also sponsored by Baidu, Inc., Microsoft Research Asia, Simons, MEMSIC, Devisersoftware, Beijing LOIT Technology Ltd., Beijing Computing Center, SmeshLink, Henotech, and Tongfang Microelectronics Company. We also wish to extend our special thanks to the editorial board of *Journal of Computer Research and Development*, *Journal of Instrument and Control*, *Journal of Software*, *Ad Hoc & Sensor Wireless Networks*, and *International Journal of Sensor Networks (IJSNet)*.

CWSN2011 Program Chairs

Yuxuan Wang, Jianzhong Li, Limin Sun

September, 2011

# 大会主席简介



世界著名计算机学家，2000 年图灵奖得主，美国科学院院士，美国艺术与科学学院院士，中国科学院外籍院士，国际密码协会会员，清华大学交叉信息研究院院长，清华学堂计算机科学实验班首席教授，973 项目首席科学家。

1975 年至 1986 年，分别在麻省理工学院、斯坦福大学、加州大学伯克利分校任教授；1986 年至 2004 年 6 月担任普林斯顿大学教授；2004 年离开普林斯顿大学出任清华大学教授。

## 姚期智

研究方向包括计算理论及其在密码学和量子计算中的应用，在三大方面具有突出贡献：(1) 创建理论计算机科学的重要次领域：通讯复杂性和伪随机数生成计算理论；(2) 奠定现代密码学基础，在基于复杂性的密码学和安全形式化方法方面有根本性贡献；(3) 解决线路复杂性、计算几何、数据结构及量子计算等领域的开放性问题并建立全新典范。

2000 年，对计算理论包括伪随机数生成、密码学与通信复杂度的突出贡献使姚教授荣膺图灵奖 (A. M. Turing Award)，成为图灵奖创立以来首位获奖的亚裔学者，也是迄今为止获此殊荣的唯一华裔计算机科学家。图灵奖是世界计算机科学领域的最高奖项，与物理、化学、医学、经济学领域的诺贝尔奖齐名。其他荣誉和奖项包括 1987 年的波里亚奖和 1996 年的高德纳奖等，以及滑铁卢大学、香港中文大学、香港科技大学和香港城市大学荣誉博士学位。



中国工程院院士，中国计算机学会传感器网络专委会主任，中国人民解放军总参谋部某研究所研究员，长期从事指挥自动化总体研究和网络工程建设，是军队指挥控制系统学术带头人之一。曾担任“全军指挥自动化网二期工程”副总工程师、“全军指挥自动化网三期工程”总工程师，现任解放军理工大学博士生导师等职。

## 戴浩



Prof. **Andrew Chi-Chih Yao**, world-leading computer scientist, winner of the A.M. Turing Award in 2000. He is member of the US National Academy of Sciences, the American Academy of Arts and Sciences and the Chinese Academy of Sciences. He is also Dean of Institute for Interdisciplinary Information Sciences, Tsinghua University, Chair Professor of “Tsinghua Xuetao Special Pilot CS Class”, 973 Program Chief Scientist.

After serving on the faculty at the Massachusetts Institute of Technology (1975-1976), Stanford University (1976-1981, 1982-1986) and the University of California at Berkeley (1981-1982), he joined Princeton University in 1986 as the William and Edna Macaleer Professor of Engineering and Applied Science. In 2004, he left Princeton to become a Professor at Tsinghua University.

Prof. Yao has made research contributions in three ways: (1) creating important sub-fields for theoretical computer science, (2) helping lay the foundations of modern cryptography, and (3) resolving open problems and establishing new paradigms in circuit complexity, computational geometry, data structures, and quantum computing.

Prof. Yao was awarded the A.M. Turing Award in 2000 for his contributions to the theory of computation, including the complexity-based theory of pseudorandom number generation, cryptography, and communication complexity. He is the first Asian laureate of the Turing Award since its establishment and the only Chinese laureate so far. The Turing Award is recognized as the "highest distinction in Computer Science" and the "Nobel Prize of computing". He has also received numerous other honors and awards including the George Polya Prize and the first Donald E. Knuth Prize, and several honorary degrees from the University of Waterloo, the Chinese University of Hong Kong, the Hong Kong University of Science and Technology, and the City University of Hong Kong.



Prof. **Hao Dai**, member of Chinese Academy of Engineering, Director of China Computer Federation Technical Committee on Sensor Network, research fellow at an institute of PLA Headquarters of the Central Staff and PhD supervisor of PLA University of Science and Technology. Prof. Dai is engaged in the general research on command automation and network construction and is one of the academic pioneers in the military command and control system. Prof. Dai was Deputy Chief Engineer of Military Command Automation Network Project (II), and chief engineer of Military Command Automation Network Project (III).

## 大会特邀演讲嘉宾简介



### David Culler

*UC Berkeley*

物联网——走向可持续性发展

**The Internet of Every Thing - steps toward sustainability**

#### 摘要:

如今的互联网已几乎可实现人人联网，不久的将来我们将实现物联网。这将是互联网的新阶段，可实现物理信息直接连入互联网，推动物理信息在信息处理应用中的流动，促进智能决策的发展。

过去十年间的大量研究工作已为这一互联网新阶段奠定了重要基础，包括集成感知、计算和通信功能的低能耗设备，鲁棒的、以通讯为中心的嵌入式操作系统，以及可靠的、节能路由协议等。

如今，基于 6LoWPAN/ROLL 的紧凑结构的 IPv6 研究已成为物联网研究的前沿。它是智能电网，节能建筑，和可持续工业生产等应用的关键。低功耗无线传感器网络为上述可持续性与节能应用研究提供了技术和重要经验。

#### 人物简介:

**David Culler:** 美国工程院院士，IEEE Fellow，ACM 会士，TinyOS 发明人，加州大学伯克利分校(UC Berkeley)教授。Culler 教授是加州大学伯克利分校英特尔研究中心主任、创建人，曾获得 ACM 杰出成就奖，美国国家科学基金会青年科学家总统奖和美国国家科学基金会颁发的总统教授学者奖；并入选《科学美国人》50 强研究者和《技术评论》改变世界的十项技术名单。

## **Abstract:**

Today's networks allow us to connect almost everybody, but soon we will have the ability to connect almost every thing of value. This new tier of the internet will connect directly to the physical world, allowing a real-world web of physical information to stream into and out of the information processing enterprise, driving decision making and action.

Broad research efforts over the past decade have created the technological foundations of this tier, including the integration of sensing, computing, and communication into compact, low-power devices, the development of robust, communication-centric embedded operating systems, and the formulation of reliable, energy-efficient routing protocols.

Recently, it has become truly the front-tier of the Internet with 6LoWPAN/ROLL carrying IPv6 in compact form. We now see its emergence as the key to the intelligence of smart grids, green buildings, and sustainable industrial processes. Low power WSNs contribute both technology and key lessons that can be applied toward sustainability more broadly.

## **Biography:**

David Culler is a Professor and Chair of Computer Science, Associate Chair of Electrical Engineering and Computer Sciences at the University of California, Berkeley and Faculty Directory of i4energy. Professor Culler received his B.A. from U.C. Berkeley in 1980, and M.S. and Ph.D. from MIT in 1985 and 1989. He has been on the faculty at Berkeley since 1989, where he holds the Howard Friesen Chair. He is a member of the National Academy of Engineering, an ACM Fellow, an IEEE Fellow and was selected for ACMs Sigmod Outstanding Achievement Award, Scientific American's 'Top 50 Researchers', and Technology Review's '10 Technologies that Will Change the World'. He received the NSF Presidential Young Investigators award in 1990 and the NSF Presidential Faculty Fellowship in 1992. He is co-PI on the NSF CyberPhysical Systems LoCal and ActionWebs projects, and was the Principal Investigator of the DARPA Network Embedded Systems Technology project that created the open platform for wireless sensor networks based on TinyOS, co-founder and CTO of Arch Rock Corporation, and the founding Director of Intel Research, Berkeley. He has done seminal work on complex energy systems, networks of small, embedded wireless devices, planetary-scale internet services, parallel computer architecture, parallel programming languages, and high performance communication, and including TinyOS, PlanetLab, Networks of Workstations (NOW), and Active Messages. He has served on Technical Advisory Boards for several companies, including People Power, Inktomi, ExpertCity (now CITRIX on-line), and DoCoMo USA



## **P.R.Kumar**

*University of Illinois, Urbana-Champaign*

**Cyberphysical 系统的若干关键问题**

**Challenges in Cyberphysical Systems**

### **摘要:**

介绍 Cyberphysical 系统发展的历史轨迹与当前研究热点, 以及这一领域的一些基础研究问题, 包括数据融合、实时通信、时间同步、中间件技术、混合系统和正确性证明。

### **人物简介:**

**P.R.Kumar:** 美国美国工程院院士, 第三世界科学院院士, IEEE Fellow, 美国伊利诺伊大学香槟分校(University of Illinois, Urbana-Champaign)电子与计算机工程系教授。目前还担任清华大学无线通信客座教授组组长和客座教授。Kumar 教授于 2006 年获 IEEE 控制系统领域奖, 2007 年获 IEEE 通讯协会 Fred W. Ellersick 奖, 是 IT Convergence Lab 的创建人。



## **Abstract:**

We present a historical account of paths leading to the present interest in cyberphysical systems. We present an account of several foundational research topics that underlie this area. These include issues in data fusion, real-time communication, clock synchronization, middleware, hybrid systems and proofs of correctness.

## **Biography:**

P. R. Kumar obtained his B. Tech. degree in Electrical Engineering (Electronics) from I.I.T. Madras in 1973, and the M.S. and D.Sc. degrees in Systems Science and Mathematics from Washington University, St. Louis, in 1975 and 1977, respectively. From 1977-84 he was a faculty member in the Department of Mathematics at the University of Maryland Baltimore County. From 1985-2011 he was a faculty member in the Department of Electrical and Computer Engineering and the Coordinated Science Laboratory at the University of Illinois. Currently he is at Texas A&M University, where he holds the College of Engineering Chair in Computer Engineering.

Kumar has worked on problems in game theory, adaptive control, stochastic systems, simulated annealing, neural networks, machine learning, queueing networks, manufacturing systems, scheduling, wafer fabrication plants and information theory. His current research interests are in wireless networks, sensor networks, and networked embedded control systems.

His research is currently focused on wireless networks, sensor networks, cyberphysical systems, and the convergence of control, communication and computation.

Kumar is a member of the National Academy of Engineering of the USA, as well as the Academy of Sciences of the Developing World. He was awarded an honorary doctorate by the Swiss Federal Institute of Technology (Eidgenossische Technische Hochschule) in Zurich. He received the IEEE Field Award for Control Systems, the Donald P. Eckman Award of the American Automatic Control Council, and the Fred W. Ellersick Prize of the IEEE Communications Society. He is a Fellow of IEEE. He is a Guest Chair Professor and Leader of the Guest Chair Professor Group on Wireless Communication and Networking at Tsinghua University, Beijing, China. He is also an Honorary Professor at IIT Hyderabad. He was awarded the Daniel C. Drucker Eminent Faculty Award from the College of Engineering at the University of Illinois, and the Alumni Achievement Award from Washington University in St. Louis.



## Roger Wattenhofer

*ETH Zurich*

物理算法

**Physical Algorithms**

### 摘要:

物理算法领域研究主动智能体(active agents)组成的网络系统。由于各种原因,譬如通信限制,不断演化的拓扑和各种节点失效以及网络动态变化等,这些智能体只能掌握有限信息。我们所讨论的这些网络系统不仅包括传统的计算机网络譬如传感器网络,也包括更加一般化的网络系统,譬如社交网络,高度动态变化的移动网络,甚至是那些由汽车和蚂蚁组成的网络系统。换言之,我们所处的物理世界正在变得算法化,这就使得理解和掌握物理算法变得尤为重要。

### 人物简介:

**Roger Wattenhofer:** 瑞士联邦理工学院(ETH Zurich)教授,瑞士联邦理工学院计算机系普适计算研究所创始人之一。其领导开发的多个软件项目得到了产业化,如 Wuala, StreamForge 等,Spamato 软件还被 2007 PC World 杂志评为"101 个精彩[软件]赠品"。Wattenhofer 教授在理论计算机科学和网络系统方面都做出了卓越贡献。

## **Abstract:**

The area of physical algorithms deals with networked systems of active agents. These agents have access to limited information for varying reasons; examples are communication constraints, evolving topologies, various types of faults and dynamics. The networked systems we envision include traditional computer networks such as sensor networks, but also more generally networked systems, such as social networks, highly dynamic and mobile networks, or even networks of entities such as cars or ants. In other words, the physical world is becoming algorithmic, and we need the means to understand it!

## **Biography:**

Roger Wattenhofer is a full professor at the Information Technology and Electrical Engineering Department, ETH Zurich, Switzerland. He received his doctorate in Computer Science in 1998 from ETH Zurich. From 1999 to 2001 he was in the USA, first at Brown University in Providence, RI, then at Microsoft Research in Redmond, WA. He then returned to ETH Zurich, originally as an assistant professor at the Computer Science Department. Roger Wattenhofer's research interests are a variety of algorithmic and systems aspects in computer science and information technology, currently in particular wireless networks, multi-core systems, peer-to-peer computing, and social networking. He publishes in different communities: distributed computing (e.g., PODC, SPAA, DISC), networking (e.g., MobiCom, MobiHoc, SenSys, IPSN, HotNets), or theory (e.g., STOC, FOCS, SODA, ICALP).



## 邬贺铨

中国工程院

### 物联网的设计思考

### Some Thoughts on the Design of “Internet of Things”

#### 摘要:

将从以下三方面介绍对物联网的设计的一些考虑。首先说明物联网节点间以及与基础网络之间所用的通信技术和各层协议，其次讨论物联网在感知层面的节点布局设计需要注意的问题，最后就物联网数据挖掘与智能决策提出一些需要重视的问题。

#### 人物简介:

**邬贺铨:** 中国工程院院士，光纤传送网与宽带信息网专家。曾任信息产业部电信科学技术研究院副院长兼总工程师，2002年-2010年担任中国工程院副院长。现兼任国家信息化专家组咨询委员会副主任，中国通信协会和中国电子学会副理事长，国务院三网融合专家组组长，中国下一代互联网示范工程专委会主任。是国内最早从事数字通信技术研究的专家之一。

## **Abstract:**

In this talk, I will give some of my thoughts on the design of "Internet of Things" (IoT) in the following three aspects. First, I will explain the communication techniques and protocols among the IoT nodes and their underlying network; Second, I will discuss some IoT nodes layout design aspects needing attention in the sense layer of IoT; Finally, I will bring out some important issues on the IoT data mining and intelligence decision.

## **Biography:**

Prof. Wu Hequan graduated from Wuhan Post and Telecommunications Institute in 1964. He has worked in the China Academy of Post and Telecommunications of the Ministry of Post and Telecommunications since 1964. He was Vice-President and Chief Engineer of China Academy of Telecommunications Technology from 1997 to 2003. He has conducted research and development in optical fiber transmission systems and broadband networks. He takes charge to manage R&D projects on NGI and 3G as well as LTE since 2002. He was elected academician of Chinese Academy of Engineering (CAE) in 1999 and Vice-President of CAE from June 2002 to June 2010. He is currently Vice-Director of the Advisory Committee for State Informatization of China. He is also Vice-Director of an Executive Council of China Institute of Communications (CIC) and Chinese Institute of Electronics (CIE) respectively. Prof. Wu has been appointed technical director of the new generation broadband wireless mobile communications network, one of the 16 major projects in the Outline of the National Program for Long- and Medium-term Scientific and Technological Development (2006~2020) of China. He is Director of Experts Committee of China's Next Generation Internet (CNGI) project, and is head of expert group of three network convergence of the State Council. Prof. Wu is director of standardization group of IOT. He is a senior member of IEEE.

## 第五届中国传感器网络学术会议会议程序

### The Fifth China Wireless Sensor Network Conference (CWSN 2011) Technical Program

注意： (1)三个英文报告环节 (Sessions 1A, 2A 和 3A) 的文章需要用英文 PPT 和用英文报告；  
(2)每个报告时间约为 10 分钟，提问环节约为 2 分钟。

Note: (1)All the English-written papers in Sessions 1A, 2A and 3A need to be presented in English.  
(2)Each presentation takes around 10 minutes, and the Q&A takes about 2 minutes.

#### Technical Program at a Glance

Sept. 26, 2011			Sept. 27, 2011		
09:00-09:40	Opening Ceremony	Demo & Exhibition	09:15-10:00	Invited Industry Talk	Demo & Exhibition
09:40-10:25	Keynote Speech 1		10:00-10:15	Coffee Break	
10:25-10:40	Coffee Break		10:15-11:00	Keynote Speech 4	
10:40-11:25	Keynote Speech 2		11:00-11:45	Invited Talk	
11:25-12:10	Keynote Speech 3		12:00-13:30	Lunch	
12:10-13:30	Lunch		13:30-15:50	Parallel Sessions 3A, 3B, 3C, 3D	TCSN (Technical Committee on Sensor Network) Committee Meeting
13:30-15:50	Parallel Sessions 1A, 1B, 1C, 1D		15:50-18:00		
15:50-16:05	Coffee Break				
16:05-18:25	Parallel Sessions 2A, 2B, 2C, 2D				
18:30-20:30	Banquet		18:00-20:00		TCSN Committee Dinner

## Technical Program

9月25日	活动内容
13:00-18:00	注册 <b>Registration</b> 地点: 北京国家会议中心 一楼 C2 入口处 Venue: C2 Entrance, 1 <sup>st</sup> floor, China National Convention Center
9月26日	活动内容
9:00-9:40	开幕式 <b>Opening Ceremony</b>
<b>9:40-12:10</b>	主题报告 <b>Keynote Speech</b>
9:40-10:25	大会报告 <b>1: The Internet of Every Thing - steps toward sustainability</b> <b>Keynote Address 1: The Internet of Every Thing - steps toward sustainability</b> 报告人: David Culler 教授, 加州大学伯克利分校 By: Prof. David Culler, UC Berkeley 主持人: 王雪 教授, 清华大学 Chair: Prof. Xue Wang, Tsinghua University 地点: 北京国家会议中心 三层学术报告厅 Venue: Lecture Hall (3 <sup>rd</sup> floor), China National Convention Center
<b>10:25-10:40</b>	Coffee Break
10:40-11:25	大会报告 <b>2: Physical Algorithms</b> <b>Keynote Address 2: Physical Algorithms</b> 报告人: Roger Wattenhofer 教授, 瑞士苏黎世联邦理工 By: Prof. Roger Wattenhofer, ETH Zurich 主持人: 崔莉 研究员, 中科院计算所 Chair: Prof. Li Cui, Institute of Computing Technology Chinese Academy of Sciences 地点: 北京国家会议中心 三层学术报告厅 Venue: Lecture Hall (3 <sup>rd</sup> floor), China National Convention Center
11:25-12:10	大会报告 <b>3: 物联网的设计思考</b> <b>Keynote Address: Some Thoughts on the Design of "Internet of Things"</b> 报告人: 邬贺铨 院士, 中国工程院 By: Prof. Hequan Wu, National Academy of Engineering 主持人: 孙利民 研究员, 中科院软件研究所 Chair: Prof. Limin Sun, Institute of Software Chinese Academy of Sciences Venue: Lecture Hall (3 <sup>rd</sup> floor), China National Convention Center
<b>12:10-13:30</b>	午餐: 自助餐 Lunch: Buffet 地点: 北京国家会议中心 三层 311A+B Venue: Room 311A+B, China National Convention Center
13:30-15:50	<b>Session 1A: 英文报告文章 English Papers (1)</b> 地点: 北京国家会议中心 三层 301A Venue: Room 301A Chair: Prof. Deying Li, Renmin University of China

	<p>1. Predict the Multi-hop Reliability for Receiver-Contention Based Routing in Dynamic Link Networks <i>Yongcai wang, Yuexuan Wang, Dazhong Zheng</i></p> <p>2. Online Routing and Scheduling in Bandwidth-Limited Delay Tolerant Networks <i>Zhenguo Yang, Liusheng Huang, Mingjun Xiao, Yindong Zhang, Youwen Zhu</i></p> <p>3. A Truthful and Capacity-Aware Routing Protocol for Wireless Cooperative Networks <i>Yindong Zhang, Liusheng Huang, Henan Zhao, Hongli Xu, Yujian Wang</i></p> <p>4. A Prediction-based and Low Redundancy Data Forward Strategy in Mobile Wireless Sensor Networks <i>LU Wen-wei, LI Guang-hui</i></p> <p>5. On Minimizing Interference-Free Broadcast Latency in Duty-Cycled Wireless Sensor Networks <i>Xianlong Jiao, Xiaodong Wang, Xiao Xia, Xingming Zhou</i></p> <p>6. Improved Minimum Latency Aggregation Scheduling in Wireless Sensor Networks under the SINR Model <i>Zhaoquan Gu, Guanyu Wang, Qiang-Sheng Hua, Yuexuan Wang</i></p> <p>7. Energy Efficient Tree-based Cooperative Data Aggregation for Wireless Sensor Networks <i>Gang Liu, Liusheng Huang, Hongli Xu, Yang Wang, Xueyong Xu, Yindong Zhang</i></p>
	<p><b>Session 1B: 无线传感器网络数据融合与信号处理方法</b> 地点: 北京国家会议中心 三层 301B Venue: Room 301B Chair: 罗娟 副教授, 湖南大学</p> <p>1. 传感器网络中基于相关性的协同目标检测算法 <i>蒋文涛</i></p> <p>2. 视觉传感器网络协作块压缩感知图像传输方法 <i>周四望, 王耀南, 林亚平, 胡玉鹏</i></p> <p>3. 基于稀疏信号重构的无线传感网络目标定位方法 <i>王勇, 王雪, 孙欣尧</i></p> <p>4. 基于压缩感知的新型声信号采集方法的设计和实现 <i>余恺, 李元实, 王智, 鲍明</i></p> <p>5. 传感器网络中基于小波分段常值压缩的数据收集方法 <i>李杨, 郭龙江, 李金宝, 任美睿, 范文彬</i></p>



	<p>6. 一种可信的信息物理融合系统设计框架初探 张侃, 张茗泰, 张广泉 等</p> <p>7. 无线传感器网络中一种基于非均匀划分的分簇数据融合算法 乐俊, 张维明, 肖卫东, 汤大权, 唐九阳</p> <p>8. 一种无线多媒体传感器网络的视频压缩新算法 沙亮亮, 孙力娟, 肖甫, 韩崇, 王汝传</p> <p>9. K-CLOSE:基于不确定图挖掘技术的传感器网络紧密区域发现算法 韩蒙, 李建中, 邹兆年</p> <p>10. 基于遮挡变量的多视角目标融合追踪算法 周良毅, 王智</p> <p>11. 面向三维无线传感网的移动信标路径获取方法 崔焕庆, 王英龙, 郭强, 吕家亮</p> <p>12. 基于三圆交集的二值传感器网络目标跟踪快速算法 崔逊学, 周强, 方震</p>
	<p><b>Session 1C: 无线传感器网络定位算法与系统</b> 地点: 北京国家会议中心 三层 302A Venue: Room 302A Chair: 杨卫东 副教授, 河南工业大学</p> <p>1. 基于弹力的无线 Ad-hoc 网络节点定位方法 官鲁斌;吴小兵;陈贵海</p> <p>2. 区分定位: 克服不可定节点影响的有效方法 汪晗, 齐望东, 王坤</p> <p>3. Whistle-无需时间同步的 TDOA 定位系统 余冉, 许斌, 孙国栋</p> <p>4. 基于 RSSI 全向拟合经验图的节点自定位算法 徐学永, 黄刘生, 黄河, 徐宏力, 张银东, 刘刚</p> <p>5. 一种基于已知位置数据库的传感器网络定位算法 方震, 赵湛, 崔逊学 等</p> <p>6. 基于目标的声阵列网络自定位机制 薛海亮, 王智, 邵华杰, 骆吉安, 鲍明, 冯大航</p>

<p>7. LoSF: 一种抗多径和阴影的视距指纹定位算法 <i>陈永乐, 朱红松, 孙利民</i></p> <p>8. R-KNN: 一种基于 Wi-Fi RSSI 的楼宇内定位算法 <i>牛建伟, 刘洋, 卢邦辉</i></p> <p>9. 基于 WI-FI 和蓝牙融合的室内定位算法 <i>王睿, 赵方, 彭金华等</i></p> <p>10. 一种用于无线传感器网络的非线性最小二乘声源定位算法 <i>崔晓宗, 仝杰, 刘波 等</i></p> <p>11. 大范围无线电干涉定位系统 <i>张苏, 张悦, 齐望东</i></p> <p>12. 视觉传感器网络中基于 RANSAC 的鲁棒定位算法 <i>张波, 罗海勇, 刘冀伟, 胡广大</i></p>
<p><b>Session 1D: 无线传感器网络覆盖与拓扑控制问题</b> 地点: 北京国家会议中心 三层 302B Venue: Room 302B Chair: 李平 副教授, 长沙理工大学</p> <p>1. 基于网格划分的节点调度覆盖算法 <i>张茜, 孙力娟, 郭剑 等</i></p> <p>2. 基于均匀分簇的 2-控制划分近似算法 <i>张庆波, 禹继国, 王辉</i></p> <p>3. 基于博弈论的无线传感器网络均衡可靠拓扑控制算法 <i>郝晓辰, 张亚晓, 刘彬, 贾楠</i></p> <p>4. 混合无线传感器网络中的网关部署算法 <i>郭雪泉, 李建中, 于博</i></p> <p>5. 一个能量有效的无线传感器网络局部式覆盖算法 <i>任少华, 禹继国, 王光辉</i></p> <p>6. 一种实现移动全覆盖问题的节点移动策略 <i>张乐, 李栋, 崔莉</i></p> <p>7. 无线传感器网络中基于虚拟半径的覆盖算法 <i>李小龙, 李明明, 黄廷磊, 林亚平</i></p> <p>8. 随机部署网络中连通度、覆盖率与节点数目的关系</p>

	<p>朱亚松, 齐望东, 张 骋 等</p> <p>9. 面向三维的无线传感器网络覆盖增强算法 吴帅, 孙力娟, 肖甫 等</p> <p>10. 无线传感器网络中基于移动模型的栅栏覆盖研究 舒坚, 余坤, 刘琳岚, 董海星, 湛友仁</p> <p>11. 一种最大化 Ad hoc 网络生存期的拓扑控制算法 李晓鸿, 王文艳, 王 东</p> <p>12. Multi-Radio 无线 Ad hoc 网络中基于协议冲突模型的功率分配方案研究 王鲜, 李金宝</p>
15:50-16:05	Coffee Break
	<p><b>Session 2A: 英文报告文章 English Papers (2)</b></p> <p>地点: 北京国家会议中心 三层 301A Venue: Room 301A Chair: Prof. Liusheng Huang, University of Science and Technology of China</p> <p>1. A Distributed and Kernel-Based Scheme for Location Verification in Wireless Sensor Networks <i>Yang Yajun, Gao Hong, Li Jianzhong, Shi Shengfei</i></p> <p>2. Efficient Distributed Algorithm for Correctly Finding Disjoint Paths in Wireless Sensor Networks <i>Kejia Zhang, Hong Gao</i></p> <p>3. Adaptive Edge Detection with Distributed Behavior-based Agents in WSNs <i>Shouming Ma, Ruchuan Wang, Ning Ye</i></p> <p>4. Traffic Information Detection Based on Scattered Sensor Data: Model and Algorithms <i>Wei Zhang, Guo-Zhen Tan, Nan Ding</i></p> <p>5. Information Quality Aware Tracking in Uncertain Sensor Networks <i>Qianqian Ren, Jianzhong Li, Siyao Cheng</i></p> <p>6. Indoor TOA ranging error classification model for localization algorithm <i>Jie He, Qin Wang, Qianxiong Zhang, Yanwei Yu, Bingfeng Liu</i></p> <p>7. Activated Swarm Fault Tolerance in Wireless Sensor Networks under Massive Correlated Failure <i>Zhaofeng Li, Yichuan Jiang</i></p> <p>8. Reliability-Aware Power Adjustment in Air-Soil Wireless Sensor Networks</p>

16:05-18:25	<p><i>Fang Xiaolin, Gao Hong and Li Jianzhong</i></p>
	<p><b>Session 2B: 无线传感器网络数据汇集、查询与调度</b>                  地点: 北京国家会议中心 三层 301B                  Venue: Room 301B                  Chair: 朱艺华 教授, 浙江工业大学</p> <ol style="list-style-type: none"> <li>1. 车载自组网中一种节点密度自适应的数据分发策略 <i>杨卫东, 刘伎昭, 邓森磊, 朱红松</i></li> <li>2. 无线传感器网络随机性与结构化折衷的双盲数据发现方法 <i>杨金峰 石高涛 赵增华</i></li> <li>3. 一种能量有效的双层传感器网络 top-k 安全查询机制 <i>廖晓静, 李建中, 余磊</i></li> <li>4. SecTQ: 两层传感器网络中隐私与完整性保护的 Top-K 查询协议 <i>李睿 林亚平 易叶青 熊帅 叶松涛</i></li> <li>5. 一种基于二叉树的传感器网络数据聚合调度策略 <i>刘晓峰, 王一雄, 张子奇, 业宁</i></li> <li>6. 传感器网络面向实时事件捕获的联合部署与调度策略 <i>陆汉城, 李燕君, 朱艺华</i></li> <li>7. Dual-Radio 无线传感器网络睡眠调度机制的研究 <i>杨健, 李金宝, 张德升</i></li> <li>8. DMPMC: 无线传感器网络分布式多信道多功率数据聚集调度算法 <i>范文彬, 郭龙江, 李金宝, 任美睿, 李杨</i></li> <li>9. 基于分布式图染色的无线 MAC 调度算法研究 <i>张晓轲, 曾健平, 徐朝农, 徐勇军</i></li> <li>10. 基于组移动模型的移动传感网数据聚集算法的研究 <i>朱珺青, 郭龙江, 任美睿, 钟颖莉</i></li> <li>11. 支持多维查询的数据存储策略的设计 <i>毛科技, 陈庆章等</i></li> <li>12. 无线传感器网络分布式数据查询算法分析与优化 <i>邵冬冬, 叶晓国, 王汝传, 孙力娟</i></li> </ol>
	<p><b>Session 2C: 无线传感器网络通信协议</b>                  地点: 北京国家会议中心 三层 302A                  Venue: Room 302A</p>

	<p><b>Chair:</b> 鲍明 副研究员, 中国科学院声学研究所</p> <ol style="list-style-type: none"> <li>1. 低占空比无线传感器网络中的动态数据传输协议 <i>段轶, 吴小兵, 陈贵海</i></li> <li>2. 基于 BWAS_BM 的移动代理路由算法研究 <i>张胜, 贺庆全</i></li> <li>3. 无线传感器网络分层聚类路由算法 <i>杨云, 田浩澄, 顾沈君 等</i></li> <li>4. 无线传感器网络中基于多路径的可靠路由协议研究 <i>张莉, 李金宝</i></li> <li>5. Multi-Power Multi-Radio 传感器网络跨层优化的路由方法研究 <i>郭晓行, 李金宝</i></li> <li>6. 传感器网络中一种能量有效的支持多查询的随机路由算法 <i>范斌, 李金宝, 郭龙江, 柳絮</i></li> <li>7. MTRP:高可靠多路径采集树路由协议 <i>荆刚, 陈冬岩, 贾磊, 黄旭, 于磊磊</i></li> <li>8. 容迟网络路由技术研究 <i>徐佳, 王汝传, 孙力娟, 肖甫</i></li> <li>9. 基于移动 Agent 的无线多媒体传感器网络 QoS 路由算法 <i>李致远, 王汝传</i></li> <li>10. 中心计算的无线传感器网络 2-不相交路径路由算法 <i>于磊磊, 陈冬岩, 刘月美, 黄旭</i></li> <li>11. 一种高效的容迟网络比例路由策略 <i>杨振国, 黄刘生, 肖明军, 张银东</i></li> <li>12. 最大化网络生存期的无线传感器网络协作通信路由算法 <i>陈永锐, 易卫东</i></li> </ol>
	<p><b>Session 2D: 无线传感器网络的基础设施的理论和技術</b>  地点: 北京国家会议中心 三层 302B  Venue: Room 302B  Chair: 陈晓江 副教授, 西北大学信息学院</p> <ol style="list-style-type: none"> <li>1. 一种基于链路感知的 VANET 路由协议 <i>沈虎, 王晓东, 周兴铭</i></li> </ol>

	<p>2. AMCB: 基于多控制信道预约和冲突通知的无线传感器网络 MAC 协议 王志刚, 李金宝</p> <p>3. 一种簇状无线传感器网络邀请重传方法 万亚东, 王沁, 张晓彤</p> <p>4. PDHP: 一个适于土遗址微环境监测的 WSN 路由协议 陈晓江, 房鼎益, 张谦, 刘晨, 韩金枝</p> <p>5. 一种改进的无线传感器网络 LEACH 算法 李悦, 孙力娟, 王汝传, 黄海平</p> <p>6. 一种基于 BP 神经网络的 WSNs 链路质量预测方法 刘琳岚, 樊佑磊, 舒坚</p> <p>7. 基于无线传感器网络的停车诱导信息系统中无线传输链路性能分析 许旭柱, 易卫东</p> <p>8. 基于 PID 算法的无线体域网中节点功率控制机制 肖玲, 罗娟, 李仁发, 钟球</p> <p>9. EasiLWR: 一种轻量级传感器网络无线重编程技术 邱杰凡, 李栋, 石海龙, 崔莉</p> <p>10. 基于元数据的数据互联算法 金加根, 李文锋, 薛小红, 鲍军荣</p> <p>11. 一种用于车载容迟网络的二维时钟同步算法 赵忠华, 皇甫伟, 孙利民</p> <p>12. TSIC: 一种适用于间断性连通传感器网络的时间同步算法 蒋文涛, 吕俊伟, 朱红松, 孙利民</p>
18:30-20:30	<p>晚餐: 自助餐 Dinner: Buffet 地点: 北京国家会议中心 三层 311A+B Venue: Room 311A+B, China National Convention Center</p>
9月27日	活动内容
09:15-10:00	<p><b>企业邀请报告: 百度框计算</b> <b>Invited Industry Talk: "Box Computing" in Baidu</b> 报告人: 李彦宏, 百度公司 By: Yanhong Li Baidu Company 主持人: 王跃宣 教授, 清华大学 Chair: Prof. Yuexuan Wang, Tsinghua University 地点: 北京国家会议中心 三层学术报告厅</p>

	Venue: Lecture Hall (3 <sup>rd</sup> floor), China National Convention Center
10:00-10:15	Coffee Break
10:15-11:00	<p><b>大会报告 4: Challenges in Cyberphysical Systems</b>  <b>Keynote Address: Challenges in Cyberphysical Systems</b>          报告人: P.R. Kumar 教授, 美国伊利诺伊大学香槟分校          By: Prof. P.R. Kumar, UIUC          主持人: 李建中 教授, 哈尔滨工业大学          Chair: Prof. Jianzhong Li, Harbin Institute of Technology          地点: 北京国家会议中心 三层学术报告厅          Venue: Lecture Hall (3<sup>rd</sup> floor), China National Convention Center</p>
11:00-11:45	<p><b>研究生科研论文指导计划</b>  <b>How to Write Research Papers</b>          邀请报告人: 李建中 教授, 哈尔滨工业大学          Invited Speaker: Prof. Jianzhong Li, Harbin Institute of Technology          主持人: 易卫东 教授, 中科院研究生院          Chair: Prof. Weidong Yi, Graduate University of Chinese Academy of Sciences          地点: 北京国家会议中心 三层学术报告厅          Venue: Lecture Hall (3<sup>rd</sup> floor), China National Convention Center</p>
12:00-13:30	<p>午餐: 自助餐          Lunch: Buffet          地点: 北京国家会议中心 三层 311A+B          Venue: Room 311A+B, China National Convention Center</p>
13:30-15:50	<p><b>Session 3A: 英文报告文章 English Papers (3)</b>          地点: 北京国家会议中心 三层 301A          Venue: Room 301A          Chair: Prof. Deyun Gao, Beijing Jiaotong University</p> <ol style="list-style-type: none"> <li>1. Energy Consumption Monitoring for Sensor Nodes in SNAP <i>Zhong Shen, Xiaorui Pan, Caiyan Huang, Juntao Feng, Yun Zhao, Min Gao, Lionel M. Ni</i></li> <li>2. Wildlife Monitoring using Heterogeneous Wireless Communication Network <i>Zhang Le, Zhao Ze, Li Dong, Liu Qiang, Cui Li</i></li> <li>3. Character-Aware Traffic Data Quality Analysis Based on Cusp Catastrophe Theory and Wireless Sensor Network <i>Nan Ding, Guozhen Tan, Wei Zhang, Yaodong Wang</i></li> <li>4. An Energy-Efficient Opportunistic Relay Assignment in Wireless Cooperative Networks <i>Yindong Zhang, Liusheng Huang, Henan Zhao, Hongli Xu</i></li> </ol>

	<p>5. EasiSec: A SoC Security Coprocessor Based on Fingerprint-based Key Management for WSN <i>Yi Wang, Li Cui</i></p> <p>6. A Comparative Simulation Study of Rate Adaptation Algorithms in Wireless Networks <i>Tingpei Huang, Haiming Chen, Li Cui</i></p> <p>7. Historical Context-based Decision Making Model on Internet of Things <i>Chen Zhikui, Qiu Yiteng, Li Liang, Bu Fanyu, Wei Zhe</i></p>
	<p><b>Session 3B: 无线传感器网络安全、信任管理与故障处理</b> 地点: 北京国家会议中心 三层 301B Venue: Room 301B Chair: 蒋崑川 教授, 东南大学</p> <p>1. 无线传感网络中节点自私行为检测与限制机制 <i>罗娟, 潘陈</i></p> <p>2. 传感器网络中一种评估节点诚实性的信任管理机制 <i>李小龙, 黄廷磊, 林亚平</i></p> <p>3. 基于无线传感器网络的一种新型防盗技术 <i>段金晟, 郭龙江, 刘勇, 朱敬华</i></p> <p>4. 一种多类型异构混合的无线传感器网络密钥管理方案 <i>陆阳, 叶晓国, 王汝传 等</i></p> <p>5. 无线传感器网络动态用户认证协议分析与改进 <i>曾平, 喻建平, 张鹏, 黄琴</i></p> <p>6. 容忍入侵的 UWSN 密钥管理方案 <i>姜涛, 王良民</i></p> <p>7. 物联网自治安全适配层模型以及 T2ToI 中 T2T 匿名认证协议 <i>任伟, 宋军, 叶敏, 刘宇靓</i></p> <p>8. FISDR: 一种新的故障注入评测无线传感器网络及其可靠性方法 <i>黄旭, 陈冬岩, 李会, 于洋, 荆刚, 于磊磊</i></p> <p>9. 一种基于密度趋近的无线传感器网络故障恢复方法 <i>高娟, 高志鹏, 黄日茂, 孟洛明</i></p>
	<p><b>Session 3C: 无线传感器网络应用及物联网</b> 地点: 北京国家会议中心 三层 302A Venue: Room 302A Chair: 孙力娟 教授, 南京邮电大学</p>



	<p>1.无线传感器网络在机载系统故障预测与健康管理的應用研究 杨洲, 景博, 张劼</p> <p>2. TCCM:传感网中基于切向约束的 B 样条等值线监测算法 孙毅辉, 郭龙江, 刘勇, 钟颖莉</p> <p>3.基于无线传感器网络和 GIS 的智能物流监控系统 孙玉砚, 杨红, 刘卓华, 皇甫伟</p> <p>4.基于 Zigbee 网络和 D-S 数据融合的数据融合的灌溉系统设计 戴菲菲, 彭力</p> <p>5.基于无线体域网技术的老人健康监护系统的设计 轩运动, 赵湛, 方震等</p> <p>6.交通无线传感器网络研究进展 孙荣丽, 王睿, 崔莉</p> <p>7.基于 ZigBee/GPRS 物联网网关系统的设计与实现 陈琦, 韩冰, 秦伟俊</p> <p>8.分布式网络嗅探器系统的设计与分析 姜日东, 张伟, 厉鹏飞</p> <p>9.基于物联网的农业信息化系统研究与设计 孙彦景, 丁晓慧, 于满, 田红</p> <p>10.基于 WSN 的危险品在途监测车载系统 张兵, 李士宁, 李志刚</p>
	<p><b>Session 3D: 无线传感器网络系统与平台</b> 地点: 北京国家会议中心 三层 302B Venue: Room 302B Chair: 梁韡 研究员, 中科院沈阳自动化研究所</p> <p>1. 传感网中间件测试与验证平台 李强, 秦伟俊, 刘燕, 王瑞聪, 韩冰</p> <p>2. EasiSolar: 一种高效的太阳能传感器网络节点系统设计与实现 张静静, 赵泽, 陈海明, 崔莉</p> <p>3. 一种新型的无线传感器网络中目标移动轨迹算法 马寅, 王汝传, 孙力娟, 黄海平</p>

	<p>4. 低能耗超声波传感器驱动电路设计 <i>孙昊, 易卫东</i></p> <p>5. 时间驱动的深度嵌入式智能感知网操作系统分析与设计 <i>张伟, 赵霞, 王祝萍, 姜日东, 厉鹏飞</i></p> <p>6. JmoteNet: 一种支持可靠程序部署和性能测量的无线传感器网络实验床 <i>徐光圣, 仝杰, 刘玟 等</i></p> <p>7. 新型智能消防系统的硬件平台构建与研发 <i>段胜安, 葛泉波, 杜明</i></p> <p>8. 基于 Contiki/COOJA 平台的 Deluge 协议性能测试 <i>徐顶鑫, 易卫东</i></p> <p>9. 煤矿信息物理融合系统模型 <i>孙彦景, 于满, 何妍君</i></p> <p>10. 基于 NS-2 的无线传感器网络仿真模块扩展方法的研究 <i>叶晓国</i></p> <p>11. 基于地理位置信息的移动互联网社交模型 <i>杨煜尧, 赵方, 罗海勇 等</i></p>
<p>13:30-18:00</p>	<p>传感器网络专委会全体委员会议 TCSN Committee Meeting 地点: 北京国家会议中心 四层 405 Venue: Room 405</p>
<p>18:00-20:00</p>	<p>传感器网络专委会全体委员自助餐 TCSN Committee Dinner 地点: 北京国家会议中心 三层 311 Venue: Room 311, China National Convention Center</p>





















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