FIT

浙江大学
信息学部

Faculty of Information Technology
Zhejiang University

浙江大学信息学部
FACULTY OF INFORMATION TECHNOLOGY,
ZHEJIANG UNIVERSITY

ZHEJIANG UNIVERSITY
1897

浙 大 学

Annual
Report 2009 年报

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学部简介：

　　信息学部成立于2009年2月，涵盖了光电信息工程学系、控制科学与工程学系、信息与电子工程学系、计算机科学与技术学院、软件学院、生物医学工程与仪器科学学院。学部共有7个一级学科，其中光学工程、控制理论与工程、生物医学工程为国家重点学科，另有两个二级学科：计算机应用、通信与信息系统为国家重点学科；拥有3个国家重点实验室，1个国家专业实验室，2个国家工程研究中心，1个国防重点学科实验室，共有18个研究所，主要开展信息领域前沿问题和工程技术问题的创新研究。

Introduction to FIT

Faculty of Information Technology (FIT) of Zhejiang University (ZJU) is established in Feb. 2009. The faculty comprises of three departments and three colleges, namely Department of Optical Engineering, Department of Information Science & Electronic Engineering, Department of Control Science & Engineering, College of Computer Science & Technology, College of Biomedical Engineering & Instrument Science ,and college of Software Technology. Currently, FIT has 7 primary disciplines, in which there are 3 national key disciplines, Optical Engineering, Control Science and Engineering, and Biomedical Engineering. Besides, 2 secondary disciplines, Computer Application Technology, Communication and Information System, are also national key disciplines. Under its administration, there are 3 State Key Laboratories, 1 National-specialized Laboratory, 2 National Engineering Research Centers, 1 Key Disciplines Laboratory of National Defense, 18 research institutes, to devote in the innovation of frontier issues and technical problems in the area of information technology.

主任：刘　旭
Dean：Liu xu

副主任：何钦铭
Vice-Dean：He Qinming

目 录

浙江大学
Annual
Report
2009年报

信息
学部

Faculty of Information Technology
Zhejiang University

■ 01

学部机构
Organization

■ 学术委员会

主 任：孙优贤　副主任：刘 旭
委 员：何赛灵　童利民　刘 承　严晓浪　章献民
　　　　张仲非　张宏建　荣 冈　庄越挺　陈 纯
　　　　孙守迁　吴朝晖　周 昆　郑筱祥　汪乐宇

■ 人力资源委员会

主 任：刘 旭　副主任：段会龙
委 员：顾培夫　童利民　刘向东　严晓浪　章献民
　　　　张朝阳　孙优贤　张宏建　荣 冈　庄越挺
　　　　陈 纯　鲍虎军　吴朝晖　陈耀武

■ 学位委员会

主 任：鲍虎军　副主任：何钦铭
委 员：白 剑　苏宏业　陈德人　宁钢民
　　　　金仲和　欧阳宏伟　徐 文　傅 新
　　　　鲍世宁

■ 教学委员会

主 任：何钦铭　副主任：于慧敏
委 员：王晓萍　张光新　陈 越　陈根才　陈耀武
　　　　杨冬晓

■ Academic Committee

Director：Sun Youxian　Vice- Director：Liu Xu
Committee members：
He Sailing　　　Tong Limin　　Liu Cheng
Yan Xiaolang　　Zhang Xianmin　Zhang Zhongfei
Zhang Hongjian　Rong Gang　　Zhuang Yueting
Chen Chun　　　Sun Shouqian　Wu Zhaohui
Zhou Kun　　　Zheng Xiaoxiang　Wang Leyu

■ Human Resources Committee

Director：Liu Xu　Vice- Director：Duan Huilong
Committee members：
Gu Peifu　　　Tong Limin　　Liu Xiangdong
Yan Xiaolang　　Zhang Xianmin　Zhang Chaoyang
Sun Youxian　　Zhang Hongjian　Rong Gang
Zhuang Yueting　Chen Chun　　Bao Hujun
Wu Zhaohui　　Chen Yaowu

■ Academic Degrees Committee

Director：Bao Hujun　Vice- Director：He Qinming
Committee members：
Bai Jian　　　Su Hongye　　Chen Deren
Jin Zhonghe　Xu Wen　　　Ouyang Hongwei
Fu Xin　　　Bao Shining

■ Teaching Committee

Director：He Qinming　Vice- Director：Yu Huimin
Committee members：
Wang Xiaoping　Zhang Guangxin　Chen Yue
Chen Gencai　　Chen Yaowu　　Yang Dongxiao

生物医学工程与仪器科学学院
软件学院
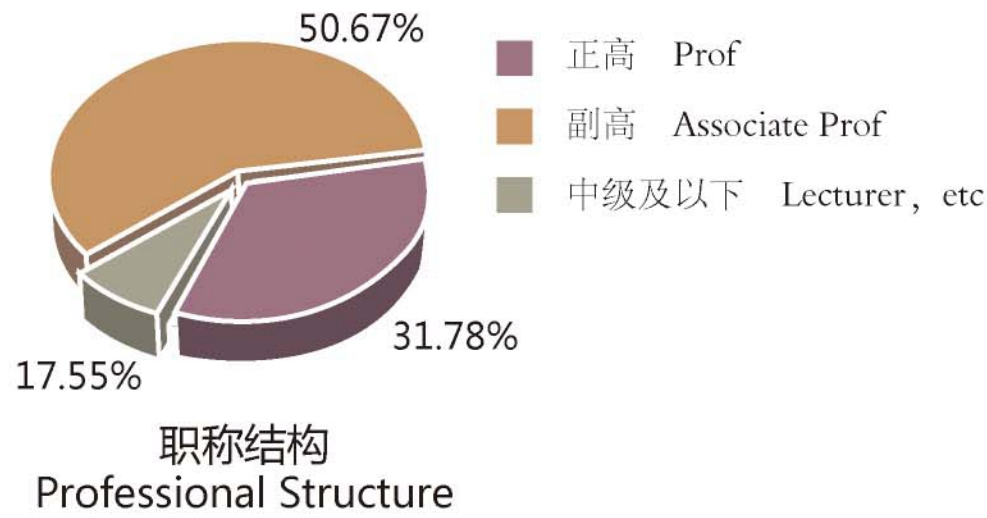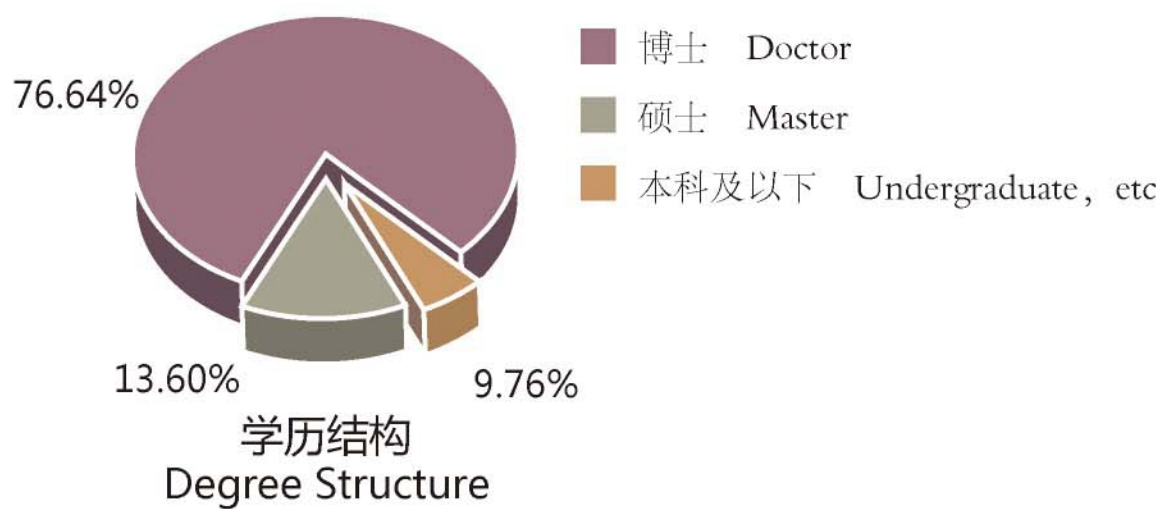计算机科学与技术学院
信息学部
信息与电子工程学系
光电信息工程学系
控制科学
系统工程与

■ 02

师资队伍
Talent Team

学部共有教职员工621人，其中正高136人，副高270人；博导146人，硕导285人。有中国工程院院士3人，教育部长江特聘教授7人，浙江省特级专家3人，杰出青年基金获得者10人，在站博士后88人。

FIT comprises a staff of 621, including 136 professors, 270 associate professors, 146 doctoral supervisors and 285 master supervisors. There are 3 members of the Chinese Academy of engineering, 7 professors specially engaged in the National Cheung Kong Scholar Program, 3 Top Experts of Zhejiang Province. Besides, 10 members of the faculty have ever got National Outstanding Youth Foundation of NSFC. 88 post-doctors are studying in FIT.

76.64%　13.60%　9.76%
博士　Doctor
硕士　Master
本科及以下　Undergraduate，etc
学历结构
Degree Structure

50.67%　17.55%　31.78%
正高　Prof
副高　Associate Prof
中级及以下　Lecturer，etc
职称结构
Professional Structure

2009年签约
■ Appointment in 2009
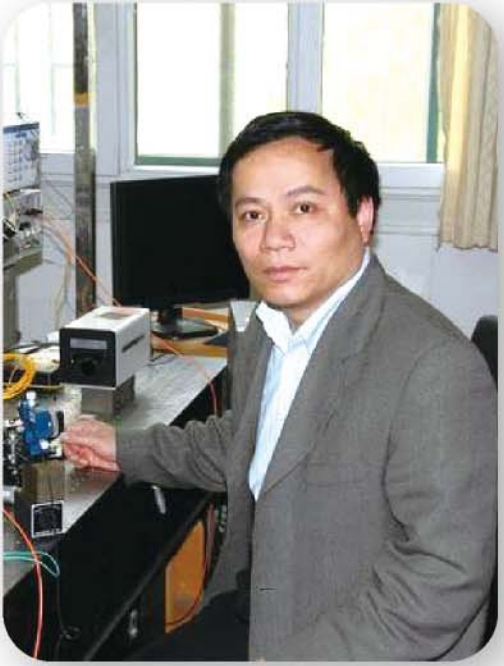
特聘专家 教授

顾 敏
Gu Min

李尔平
Li Erping

何赛灵
He Sailing

张仲非
Zhang Zhongfei

何建军
He Jianjun

长江特聘教授
Cheung Kong Scholar's Program Chair Professors

庄越挺
Zhuang Yueting

刘 旭
Liu Xu

刘俊杰
Liu Junjie

求是特聘教授
Honorary Professors of Qiushi Program of ZJU

尹文言
Yin Wenyan

张仲非
Zhang Zhongfei

教育部新世纪优秀人才
New Century Excellent Talents

卜佳俊
Bo Jiajun

张朝阳
Zhang Chaoyang

魏兴昌
Wei Xingchang

■2009年晋升
Promotion in 2009

教授
Professors

张冬仙
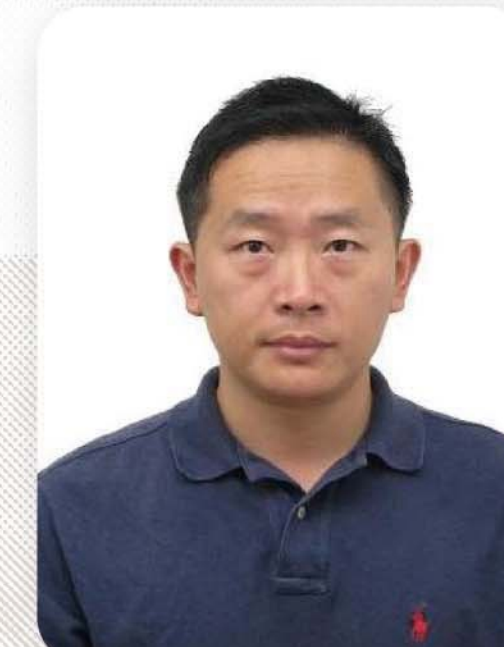Zhang Dongxian

张志华
Zhang Zhihua

杨春节
Yang Chunjie

沈会良
Shen Huiliang

陈 杭
Chen Hang

研究员
Researchers

陈 为
Chen Wei

杨小虎
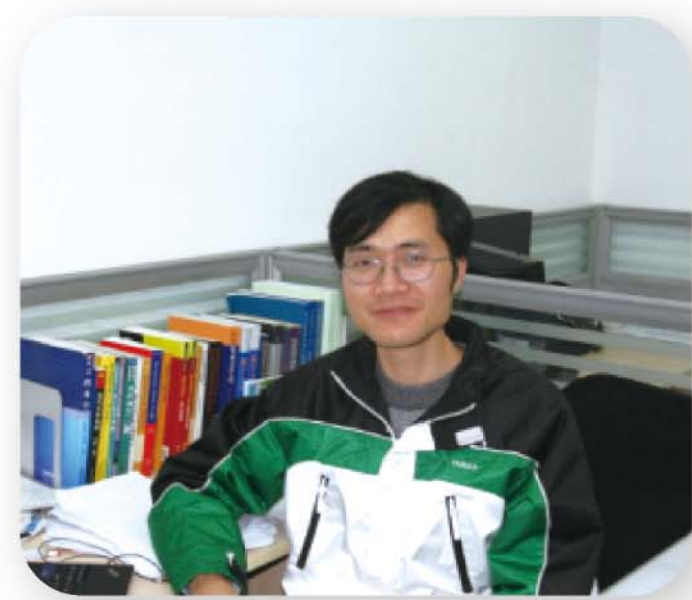Yang Xiaohu

史 烈
Shi Lie

副教授
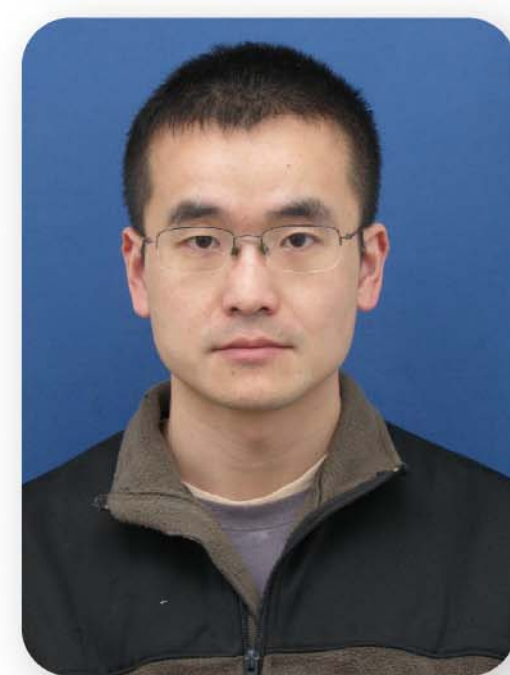**Associate Professors**

史治国
Shi Zhiguo

胡 骏
Hu Jun

肖 俊
Xiao Jun

方 伟
Fang Wei

张 琳
Zhang Lin

周 凡
Zhou Fan

顾宗华
Gu Zonghua

邓水光
Deng Shuiguang

余官定
Yu Guanding

副研究员
Associate Researchers

刘 崇
Liu Chong

黄 劲
Huang Jin

蔡 登
Cai Deng

李亚波
Li Yabo

■ 2009年新增导师

博 导：刘兴高　周建光　卢建刚　张曙光（兼职）
李尔平　张仲非　李春光　牟 颖（转学科）
灏田　景 奎　宋开臣　尹建伟

副博导：陈积明　陈红胜　杜 阳　赵民建

硕 导：李明宇　沈伟东　沈建其　杨 青　郑晓东
张登伟　汪凯巍　谢 磊　吴锡东　李东晓
化存卿　刘清君　施青松　宋明黎　胡天磊
古红英　郭 庆　王章野

■ New Supervisors in 2009
Doctoral Supervisors:

Liu Xinggao	Zhou Jianguang	Lu Jiangang	Zhang Shuguang
Li Erping	Zhang Zhongfei	Li Chunguang	Mu Ying
Chi Hao	Tian Jingkui	Song Kaichen	Yin Jianwei

Associate Doctoral Supervisors:

| Chen Jiming | Chen Hongsheng | Du Yang | Zhao Minjian |

Master Supervisors:

Li Mingyu		Shen Weidong	Shen Jianqi	Yang Qing
Zheng Xiaodong	Zhang Dengwei	Wang Kaiwei	Xie Lei
Wu Xidong	Li Dongwei	Hua Cunqing	Liu Qingjun
Shi Qingsong	Song Mingli	Hu Tianlei	Gu Hongying
Guo Qing	Wang Zhangye		

■ 2009年新教师

尹文言	方 伟	汪凯巍	刘 崇	吴 波
翁彦琳	肖 俊	王新宇	顾宗华	邓水光
李 明	黄 劲	蔡 登	张武明	姜 伟
王 酉	张 涛	潘树文	徐正国	张仲非
李春光	汪 涛	王 昊	李宇波	金小军
金 浩	龚小谨	吴昌聚	徐 杨	李亚波
郑音飞	朱小明			

■ New Teachers in 2009

Yin Wenyan	Fang Wei	Wang Kaiwei	Liu Chong
Wu Bo	Jin Yi	Wen Yanlin	Xiao Jun
Wang Xinyu	Gu Zonghua	Deng Shuiguang	Liu Haifeng
Li Ming	Huang Jing	Cai Deng	Zhang Wuming
Jiang Wei	Xu Zhengguo	Wang You	Zhang Tao
Pan Shuwen	Wang Tao	Zhang Zhongfei	Li Erping
Li Chunguang	Wang Wei	Wang Hao	Li Yubo
Jin Xiaojun	Xu Yang	Jin Hao	Gong Xiaojin
Wu Changju	Zhu Xiaoming	Li Yabo	Hu Haoji
Zheng Yinfei			

■ 2009年在站博士后

罗 斌	时尧成	张秀达	王 涛	程 梁	沈陆发
郁张维	潘 晋	陈杏藩	贾秀杰	王 玲	钱 骏
陈跃庭	殷 波	袁庆曙	赵 磊	李晓燕	章国锋
王文杰	陶煜波	朱晓亮	向 坚	刘 征	吴剑锋
李 娜	张志猛	邵 健	孙凌云	廖胜辉	贝毅君
胡 威	刁常宇	郭同强	吴 群	张树人	徐 斌
姜 波	庄 凌	徐颂华	王 锐	高 飞	周寿军
汤 杨	谢 琪	余轶军	任沁源	宣 琦	杨 磊
王亚利	葛志强	程 鹏	任子武	廖祖维	曾九孙
汤 卿	方小生	张 斌	莫凌飞	李 霞	付红伟
田 翔	李 霞	李志华	蒋荣欣	郑能干	马汉杰
程 佳	张 云	蒋 凯	汪鹏君	李昊旻	许迎科
李顶立	杨 昊	朱敏华	寿国法	叶凌云	马敬广
安继业	魏 昕	王慧泉	钟 杰	蒙 涛	张朝杰
王春晖	章惠全	郭 清	闫文哲		

■ Post-Doctors

Luo Bin	Shi Yaocheng	Zhang Xiuda	Wang Tao
Cheng Liang	Shen Lufa	Yu Zhangwei	Pan Jin
Chen Xingfan	Jia Xiujie	Wang Ling	Qian Jun
Chen Yueting	Yin Bo	Yuan Qingshu	Zhao Lei
Li Xiaoyan	Zhang Guofeng	Wang Wenjie	Tao Yubo
Zhu Xiaoliang	Xiang Jian	Liu Zheng	Wu Jianfeng
Li Na	Zhang Zhimeng	Shao Jian	Sun Lingyun
Liao Shenghui	Bei Yijun	Hu Wei	Diao Changyu
Guo Tongqiang	Wu Qun	Zhang Shuren	Xu Bin
Jiang Bo	Zhuang Ling	Xu Songhua	Wang Rui
Gao Fei	Zhou Shoujun	Tang Yang	Xie Qi
Yu Yijun	Ren Qinyuan	Xuan Qi	Yang Lei
Wang Yali	Ge Zhiqiang	Cheng Peng	Ren Ziwu
Liao Zuwei	Zeng Jiusun	Tang Qin	Fang Xiaosheng
Zhang Bin	Mo Lingfei	Li Xia Fu	Hongwei
Tian Xiang	Li Xia	Li Zhihua	Jiang Rongxin
Zheng Nenggan	Ma Hanjie	Cheng Ji	Zhang Yun
Jiang Kai	Wang Pengjun	Li Haomin	Xu Yingke
Li Dingli	Yang Hao	Zhu Minhua	Shou Guofa
Ye Lingyun	Ma Jingguang	An Jiye	Wei Xin
Wang Huiquan	Zhong Jie	Meng Tao	Zhang Chaojie
Wang Chunhui	Zhang Huiquan	Guo Qing	Yan Wenzhe

03

科学研究
Scientific Research

■ 科研概况（Scientific Research Survey）

2009年，信息学部科研经费总计3.59亿元，其中纵向科研经费超过74%。共获国家自然科学基金项目65项，总经费1687万元。获国家技术发明二等奖1项，国家科学技术进步奖二等奖1项，省级科学技术奖4项。SCI收录论文487篇、EI收录论文658篇，授权发明专利190项。

In 2009, the research funds of FIT reached over RMB 359 millions yuan in total including about 74% from state foundation. FIT also got 16.87 millions yuan with 62 projects from the Natural Science Foundation . 2 National Awards and 4 Province Awards for Science and Technology. Over 1000 papers were indexed by SCI and EI.190 patents for invention.

■ 国家研究基地(National Research Bases)

国家研究基地 National Research Bases

国家重点（专业）实验室 State Key(Specialized)labs

国家工程中心 NationalEngineering Research Centers

计算机辅助设计与图形学国家重点实验室 State Key Laboratory of CAD&CG

现代光学仪器国家重点实验室 State Key Laboratory of Modern Optical Instrumentation

工业控制技术国家重点实验室 State Key Laboratory of Industrial Control Technology

生物传感器国家专业实验室 State Specialized Laboratory of Biomedical Sensor

国家光学仪器工程技术研究中心 National Engineering and Technology Research Center for Optical Instrumentation

工业自动化国家工程研究中心 National Engineering Research Center for Industrial Automation

■ 研究所（Institute）

院系 Department/College	研究所名称 Institute	所长 Director
光电信息工程学系 Dept. of Optical Engineering	光学工程研究所 Inst.of Optical Engineering	冯华君 Prof. Feng Huajun
	光电信息及检测技术研究所 Inst.of Optoelectronic Information Detection Technology	章海军 Prof. Zhang Haijun
	光电子技术研究所 Inst.of Optoelectronic Technology	沈永行 Prof. Shen Yonghang
	光电显示技术研究所 Inst.of Optoelectronic Display	刘旭 Prof. Liu Xu
	光及电磁波研究中心 Center for Optical & Electromagnetic Research	何赛灵 Prof. He Sailing
信息与电子工程学系 Dept. of Information Science and Electronic Engineering	信息与通信工程研究所 Inst.of Information & Communication Engineering	黄爱苹 Prof. Huang Aiping
	电子电路与信息系统研究所 Inst.of Electronic Circuit & Information System	沈继忠 Prof.Shen Jizhong
	电子信息技术与系统研究所 Inst.of Electronic Information Technology &System	金晓峰 Prof. Jin Xiaofeng
	微电子与光电子研究所 Inst.of Microelectronics and Optoelectronics	金仲和 Prof. Jin Zhonghe
控制科学与工程学系 Dept. of Control Science and Engineering	工业控制研究所 Inst.of Industrial Process Control	孙优贤 Prof.Sun Youxian
	自动化仪表研究所 Inst.of Automation Instrumentation	张宏建 Prof.Zhang Hongjian
	智能系统与控制研究所 Inst.of Cyber-Systems and Control	褚健 Prof.Chu Jian
计算机科学与技术学院 College of Computer Science and Technology	人工智能研究所 Inst. of Artificial Intelligence	庄越挺 Prof.Zhuang Yueting
	计算机软件研究所 Inst.of Computer Software	陈纯 Prof.Chen Chun
	计算机系统工程研究所 Inst.of Computer System and Architecture	吴朝晖 Prof.Wu Zhaohui
	工业设计研究所 Inst.of Modern Industrial Design	孙守迁 Prof.Sun Shouqian
生物医学工程与仪器科学学院 College of Biomedical Engineering & Instrument	生物医学工程研究所 Inst.of Biomedical Engineering	段会龙 Prof.Duan Huilong
	数字技术及仪器研究所 Inst.of Digital Technology & Instrument	陈耀武 Prof.Chen Yaowu

■ 科研亮点（Research Highlights）

承担国家重大科研任务
National Important Projects in progress

| 项目名称（Project）	负责人（Director）	院系（Department/College）
新型人工电磁介质的理论与应用研究 Theory Research and Application of Metamaterials	何赛灵 Prof. He Sailing	光电信息工程学系 Dept. of Optical Engineering
支撑全过程动漫创作和产业化的关键技术研究及应用示范 The key Technology and Application Research for the Development of Animation Enterprise	庄越挺 Prof.Zhuang Yueting	计算机科学与技术学院 College of Computer Science and Technology
混合现实的理论和方法 Theory and Approaches of Mixed Reality	鲍虎军 Prof.Bao Hujun	计算机科学与技术学院 College of Computer Science and Technology
中国残疾人信息无障碍关键技术支撑体系及示范应用 Key Information and Accessibility Technologies for Disabilities and Model Applications	陈纯 Prof.Chen Chun	计算机科学与技术学院 College of Computer Science and Technology
汽车电子虚拟服务总线及其模型设计工具 Virtual Service Bus and its model design tools for automotive electronics	姚敏 Prof.Yao Min	计算机科学与技术学院 College of Computer Science and Technology
流程工业能效分析与运行优化系统的开发与应用 Development and Application of Process Industrial Energy Efficiency Analysis and Operation Optimizing Systems	苏宏业 Prof.Su Hongye	控制科学与工程学系 Dept. of Control Science and Engineering
水质安全评价与预警关键技术研发与应用示范 Research and Application of Water Quality Security Evaluation and Early-warning Technologies	张宏建 Prof.Zhang Hongjian	控制科学与工程学系 Dept. of Control Science and Engineering
仿人机器人感知控制高性能单元和系统 High Performance Units and System of Perception and Control for Humanoid Robot	吴俊 Prof.Wu Jun	控制科学与工程学系 Dept. of Control Science and Engineering
基于EPA的应用系统开发 Development of Application System Based on EPA	黄文君 Prof. Huang Wenjun	控制科学与工程学系 Dept. of Control Science and Engineering
中国2010年上海世博会海宝智能服务型机器人设计制作运营 An Intelligent Service Robot—Haibao, Expo 2010 Shanghai China	熊蓉 Associate Prof. Xiong Rong	控制科学与工程学系 Dept. of Control Science and Engineering
轨道交通微机连锁系统开发 Railway Interlocking System Development	邱昕夕 Eng. Qiu Xinxi	生物医学工程与仪器科学学院 College of Biomedical Engineering & Instrument Science

科研成果奖（Research Achievements）

① 新一代控制系统高性能现场总线——EPA

由褚健教授负责的新一代控制系统高性能现场总线—EPA项目2009年荣获国家技术发明二等奖。EPA（Ethernet for Plant Automation）是实现装备自动化的核心关键技术。本项目原创性地发明了基于角色平等的确定性传输调度方法等系列关键技术，攻克了以太网应用于工业控制系统的通信确定性与强实时性、高可靠性与高可用性、高安全性等方面的难题。

EPA已被21家国内单位和德国、日本等国外公司应用，基于EPA的控制系统和产品成功应用于大型化工、31个奥运场馆、青藏铁路监控系统，有显著的经济和社会效益。

High Performance Fieldbus EPA for New Generation Control Systems

The project directed by Prof. Chu Jian was awarded the national 2nd Prize of Technological Invention in 2009. EPA, Ethernet for Plant Automation, is one of the key technologies for Manufacturing Equipment Automation. In this project, a series of key technologies, such as Deterministic Transferring Scheduling based on peer roles, were invented to improve communication deterministic and fast real-time performance, high reliability and availability, high security and safety for Industrial Ethernet. EPA is now adopted by more than 20 companies from China, Germany, Japan etc. EPA-based products were successfully applied in monitoring and control systems for large-scale chemical industry, 31 Olympic stadiums, the Qinghai-Tibet Railway etc. which made remarkable economic and social benefits.
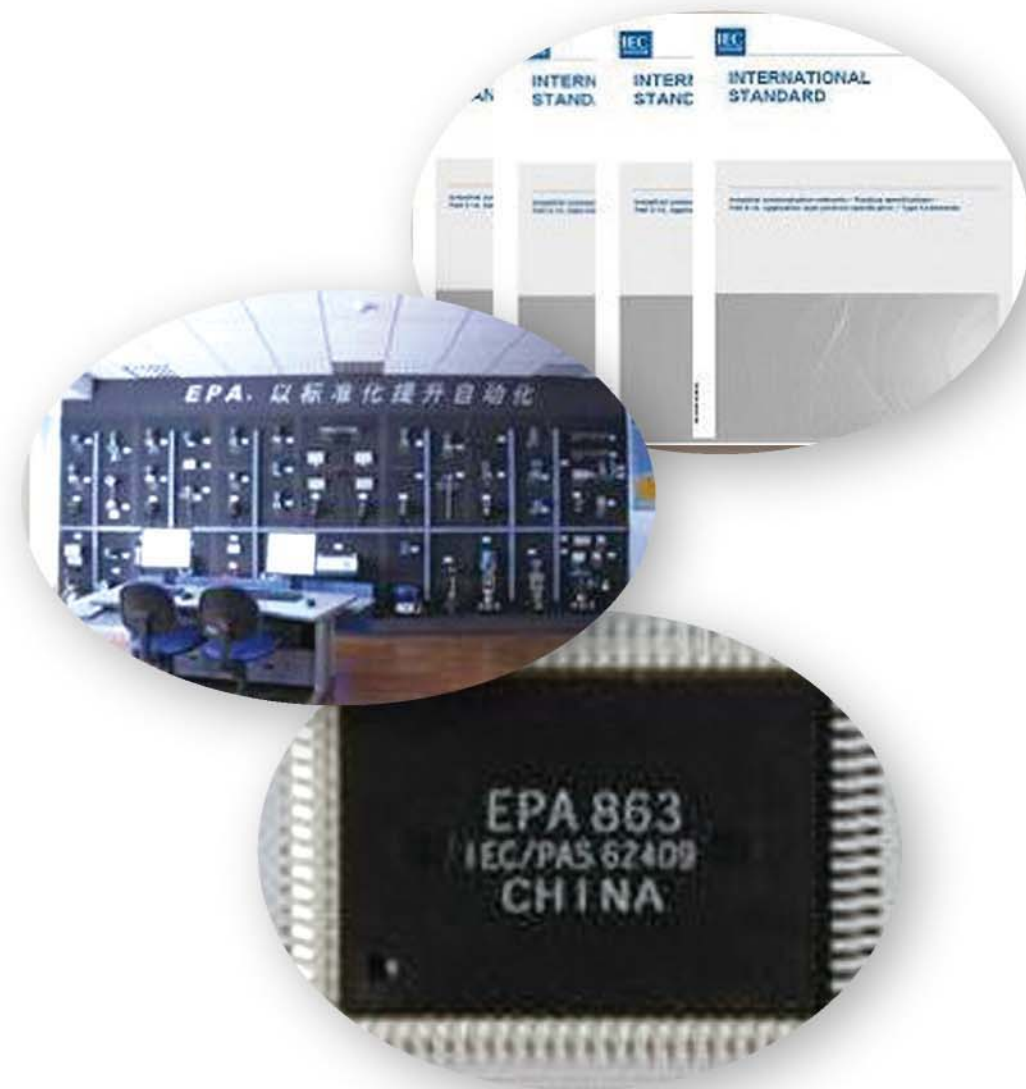
② 自主知识产权32位嵌入式CPU系列及其在数字电视等领域SOC产业化应用

该项目完成自主知识产权的高性能嵌入式CPU的开发，并通过产学研相结合，成功破解了国产CPU推广应用难题，形成了基于国产CPU进行高端SOC芯片产品开发的自主创新链，创造了我国高性能32位嵌入式CPU技术进步和产业化应用的最佳业绩。该项目主要完成人为严晓浪、张明等，2009年荣获国家科技进步二等奖。
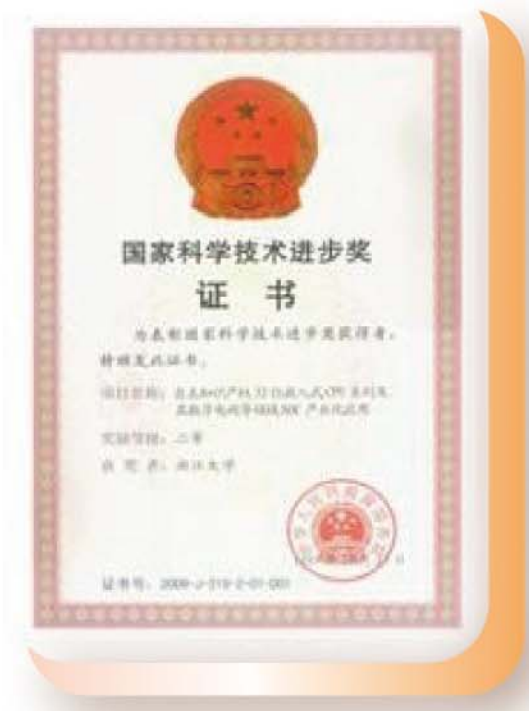
32-bit Embedded CPU Series With Own Intellectual Property and Their SOC Industrial Application in Digital TV and Other Fields

This project has accomplished the development of high-performance embedded CPU with own intellectual property, by means of the efficient cooperation among industry, university, researching and application, it successfully breaks through the difficulty in promoting extensive use of domestic CPU in industry. In addition, it forms a high-level SOC product's innovation chain based on domestic CPU, and brings about the best result in our country's high-performance 32-bit embedded CPU technology progress and industrial application. Principal Persons are Prof. Yan Xiaolang, Prof. Zhang Ming etc. The project was awarded the national 2nd Prize of Sci & Tech Progress in 2009.

③ 基于数据的生产执行系统软件及其应用

由荣冈教授负责的该项目2009年获得省科技进步一等奖。该成果采用标准的MES体系架构，集成了多层次建模、基于事件的物流动态建模、数据校正、数据可视化等多项专利技术，开发了一套基于数据的生产执行系统软件（MES－Suite）。在生产优化、节能减排、提高产品质量等方面，该软件已在石化、化工、钢铁等30多家大型企业得到了成功的应用，帮助企业取得了显著的经济和社会效益。

Data-based MES System and Its Application

The project directed by Prof. Rong Gang was awarded Zhejiang Province 1st Prize of Sci & Tech Progress in 2009.The project develops a data-based manufacturing execution system software suite (MES-Suite) for management and control in process industries. This software suite is on the basis of the standard MES infrastructure. It contains several patent technologies: multi-resolution modeling theory, event-based dynamic material-flow modeling method, data reconciliation and data visualization. Now MES-Suite has been applied in more than 30 petrochemical, chemical and steel corporations. It helps these corporations to reach the targets in process optimization, energy conservation, pollution reduction and quality improvement.

④ 基于频谱分析的自动对焦技术及应用系统

由徐之海教授负责的该项目2009年获得省科技进步二等奖。该项目基于对图像频谱分析，构造有效对焦评价函数，实现了成像系统离焦的精确判定；通过实时反馈控制实现对数字成像系统的快速自动对焦。该项整体技术研究处于国内领先，部分创新技术上达到国际先进水平。该项成果的推广应用产生了很好的经济效益和社会效益。

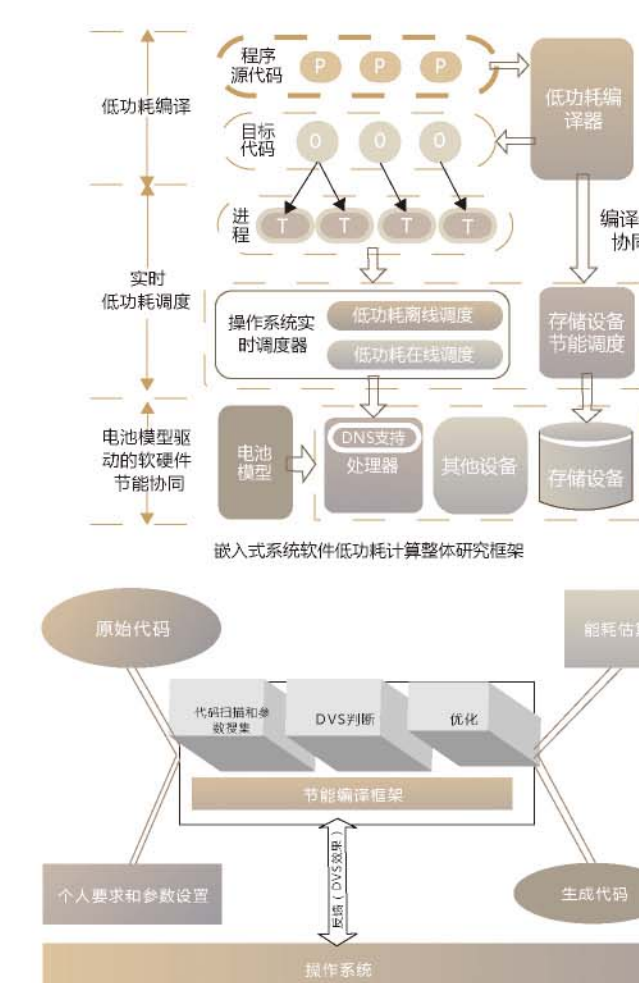### The Image Spatial Frequency Analysis Technique for Auto-focus System

The project directed by Prof. Xu Zhihai was awarded Zhejiang Province 2nd Prize of Sci & Tech Progress .Based on image spatial frequency analysis and effective auto-focus evaluation function, the defocus of imaging systems can be precisely determined. Fast auto-focus systems for digital imaging are successfully achieved by a real time feedback control of the imaging lens. The research team has been taking the leading role in the field of auto-focus imaging. The applications of this auto-focus technique to variety of imaging systems have brought great economic and social benefits.

⑤ 具有无线通信QoS机制和智能诊断功能用电现场数据采集与管理技术

由金心宇教授负责的该项目2009年获得省科技进步二等奖。该项目通过网络通信服务质量QoS的研究，解决了前期产品中数据通信故障率高、实时采集数据不完整、系统智能分析管理功能欠缺等关键技术问题，研制了高可靠的电力数据远程通信系统及嵌入式系统现场数据采集终端，为电力行业提供了一种先进的用电现场数据采集和远程无线通信系统的数据智能分析诊断管理技术。依据本项目的软硬件系列产品已得到广泛应用，促进了电力行业供电质量智能管理技术的显著提高。

Electric Power Locale Data Collectionand Management Technology with Wireless Communications QoS Mechanism and Intelligent Diagnosis Capability

The project directed by Prof. Jin Xinyu was awarded Zhejiang Province 2nd Prize of Sci & Tech Progress .By researching the network communications quality of service (QoS), The project has solved several key technology problems in the previous products, such as the high data communications failure rate, the real-time collection data incompleteness, and the lack of system intelligent analysis and management capability. Based on thedata warehouse and data fusion technology, this project has provided an advanced electric power locale data collection and remote wireless communications system data intelligent analysis and diagnosis management technique for the electric power industry. The seriesof software and hardware products derived from this project have been widely applied, and the level of power supply quality intelligent management technology in the electric power industry has been increased remarkably.

⑥ 嵌入式系统软件节能技术

由陈天洲教授负责的该项目2009年获得省科技进步三等奖。该项目成果从电池的能量转换效率和软硬件节能方面入手进行研究，利用硬件接口在性能基本没有损失的前提下，通过对嵌入式系统功能与软件的优化提高电源利用率、降低功耗，实现嵌入式系统的低功耗计算技术。

Power-aware Software Technology for Embedded System

The project directed by Prof. Chen Tianzhou was awarded Zhejiang Province 3rd Prize of Sci & Tech Progress in 2009.The research presents the relationship between battery capacity discharged and power-aware software/hardware co-design. It gives a power aware mobile embedded system design method driven by battery. It proposes a power aware operating system scheduling especially for real-time system. It also studies how to use compiler to support lower power scheduling. Operating system uses the fine-grained information from compiler static decision in power aware task scheduling.
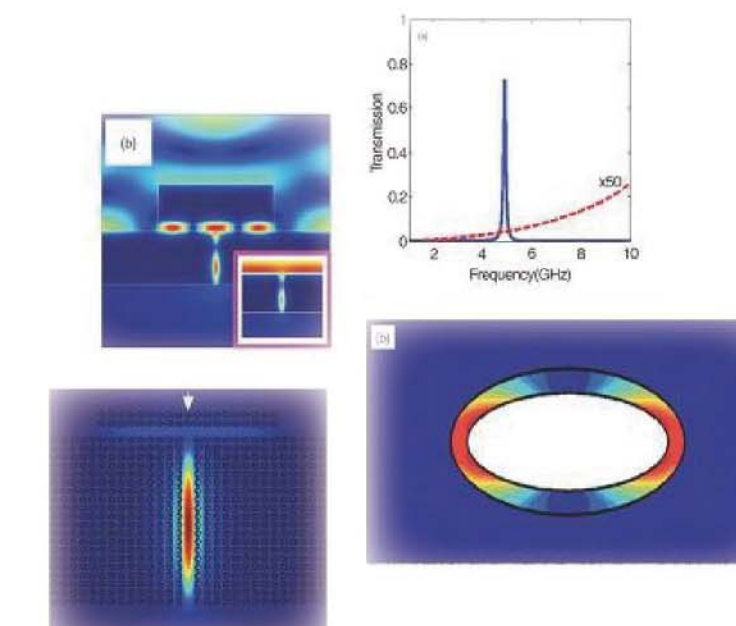
TOP论文（Recommended Papers）

01) Nano-antennas and Metamaterials

Materials Today, 12(12), 16-24 (2009)

Sailing He；Yanxia Cui；Yuqian Ye；Pu Zhang；Yi Jin

何赛灵教授等人综述了近期一些基于光学纳米天线和超材料的超射增强现象和光捕获方法。将金属纳米带状天线置于金属薄膜前方，可以有效提高TM偏振光的超常透过率。间断金属线结构能起到电偶极天线的作用，将其覆盖于金属狭缝阵列上，可以使TE偏振光出现明显的透射增强。类似的天线还可以用在光子晶体慢光波导中，显著提高波导的耦合效率。

Prof.He Sailing and his members review some recent approaches to transmission enhancement and light harvesting based on optical nano-antennas and metamaterials. Nano-cavity antennas are used to enhance the extraordinary transmission of TM-polarized light through vertical nano-slits in a metal film. The enhanced transmission of TE-polarized waves through an array of subwavelength-slits in a thin metal film at low frequencies is also investigated. Light harvesting with a metamaterial cloaking shell is also demonstrated.

02) Direct Coupling of Plasmonic and Photonic Nanowires for Hybrid Nanophotonic Components and Circuits
NANO LETTERS 9(12), 4515-4519 ,2009

X. Guo; M. Qiu; J. M. Bao; B. J. Wiley; Q. Yang; X. N. Zhang; Y. G. Ma; H. K. Yu; L. M. Tong

童利民教授等人提出将金属纳米线与光学纳米线直接耦合组成复合波导结构的设想，通过实验表明，在650nm波长处，只需要大约220nm的耦合长度就能实现光从ZnO纳米线到银纳米线大约82%的耦合效率。在此基础上进一步实现复合型Mach-Zehnder干涉结构以及环形谐振腔。其中，环形谐振腔的Q值达到520，表明这种金属纳米线－介质纳米线互补结构的纳米光子学器件在保持金属纳米线强约束的同时能从整体上降低器件损耗。研究结果为实现高密度微纳光子集成器件等应用提供了一种可行的新途径，对纳米光子学和金属表面等离子体学的研究和应用具有重要意义。

论文发表后，被Nature China和NPG Asia Materials等作为研究亮点报道，《Nature China》称其为光子学的"无缝集成"，为光子回路突破衍射极限提供了一种新的途径。
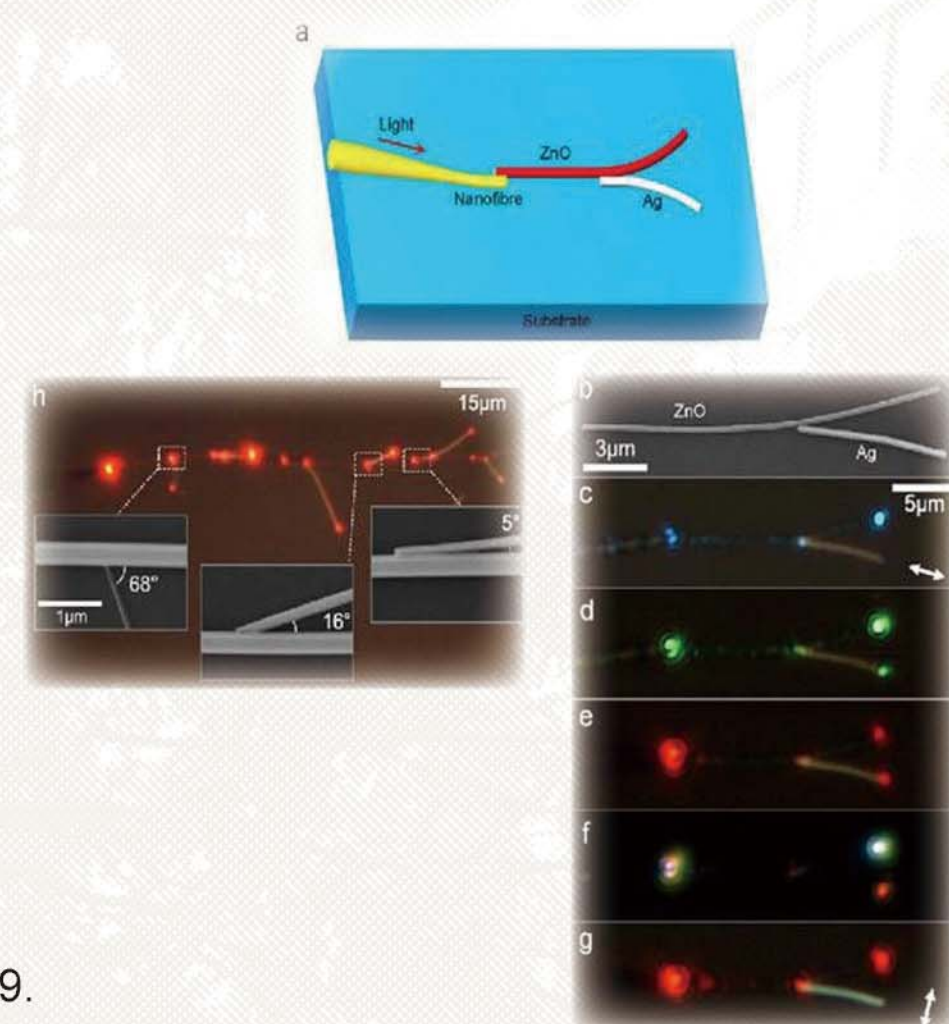
Prof.Tong Limin and his members have now circumvented all these problems by seamlessly integrating plasmonic and photonic waveguides through near-field interaction. They report direct coupling of plasmonic and photonic nanowires using ultracompact near-field interaction. Photon-plasmon coupling efficiency up to 80% with coupling length down to the 220 nm level is achieved between individual Ag and ZnO nanowires. Hybrid nanophotonic components, including polarization splitters, Mach-Zehnder interferometers, and microring cavities, are fabricated out of coupled Ag and ZnO nanowires. a hybrid nanowire microcavity exhibits a Q-factor of 520.These components offer relatively low loss with subwavelength confinement;
This research is highlighted by Nature China and NPG Asia Materials in 2009.

03) D-stability and D-stabilization of Linear Discrete Time-delay Systems with Polytopic Uncertainties
AUTOMATICA 45(3) 842-846, 2009

Mao, WJ; Chu, J
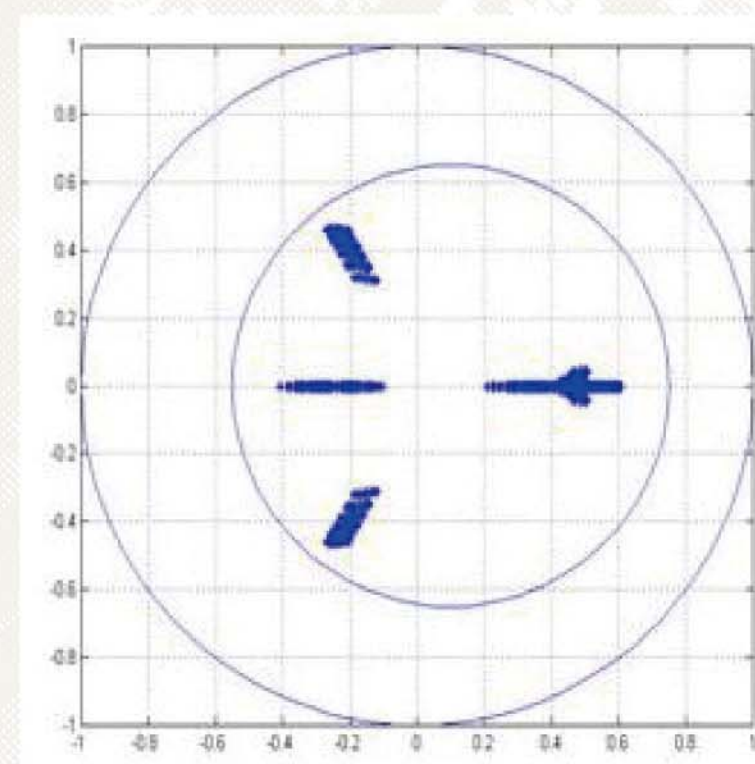
论文针对凸多面体参数不确定离散时滞系统，基于参数依赖型Lyapunov函数方法提出了区域稳定与镇定的充分条件。与传统的二次稳定性采用的固定Lyapunov函数方法相比，可明显降低判别条件的保守性。所提出的这些条件均保证闭环系统极点位于给定的圆盘区域内，以实现期望的动态特性。最后用实例论证了这些方法用于判断不确定离散时滞系统的区域稳定与镇定性以及设计区域镇定控制器方面的有效性。

Sufficient conditions for D-stability and D-stabilization of linear discrete time-delay systems with polytopic uncertainties are proposed in this paper. The results are based on parameter-dependent Lyapunov functions obtained from the feasibility of a set of LMIs defined at the vertices of polytopic systems. These conditions guarantee all the poles of a corresponding system in a specified circular region. Finally, an illustrative example shows that the proposed conditions are effective to check the D-stability and to design the D-stabilizing controller for linear discrete time-delay systems.

04) Consistent Depth Maps Recovery from a Video Sequence
IEEE Transactions on Pattern Analysis and Machine Intelligence 31(6):974-988,2009

Zhang Guofeng; Jia Jiaya; Wong Tien-Tsin; Bao Hujun

本文提出了一个基于视频序列的稠密深度恢复算法。创造性地提出在多视图立体深度恢复中采用集束优化方法，在统一的框架下将噪声、遮挡和估计误差以多帧统计的方式进行高效处理，很好地解决了噪声和遮挡对深度估计的影响，恢复的深度图不仅具有很好的时域一致性，而且在不连续边界的深度恢复方面取得了重要突破。高质量的深度恢复直接推动了很多相关应用的发展，并为复杂的视频编辑处理奠定了基础。

We propose a novel method for recovering high-quality depth maps from a video sequence. We introduce a bundle optimization framework which models the matching ambiguities with multiple frames in a statistical way. This framework effectively addresses the major difficulties in stereo reconstruction, such as image noise, occlusions and outliers, and can produce sharp and temporal consistent object boundaries among different frames. The recovered high-quality dense depth maps can facilitate many relate applications, and lay a solid foundation for complex video editing and processing. d

05) An Efficient GPU-based Approach for Interactive Global Illumination
ACM TRANSACTIONS ON GRAPHICS28(3):91-, 2009

Wang,R; Wang,R; Zhou,K; Pan,MH; Bao,HJ

本文创新性地提出了基于GPU并行架构的辐射亮（照）度缓存策略与光子图（photonmap）计算方法。这使得我们可以对全局光照模型中视线空间与全局光源分布进行快速的逼近计算。进而将传统的全动态场景全局光照效果计算速度提高了1－2个量级。完成了由离线绘制到交互级绘制的重大改变。

This paper presents a GPU-based method for interactive global illumination that integrates complex effects such as multi-bounce indirect lighting, glossy reflections, caustics, and arbitrary specular paths. We propose a new parallel irradiance caching strategy and a new approximation, illumination cut on photon tree, to reduce sampling cost and accelerate final gathering, respectively. As a result, our algorithm is the first approach to achieve interactive rates for scenes with multi-bounce diffuse and specular global illumination effects.

06) Experimental Verification of Reversed Cherenkov Radiation in Left-Handed Metamaterial
PHYSICAL REVIEW LETTERS 103(19):194801-, 2009

Xi S; Chen HS; Jiang T; Ran LX; Huangfu JT; Wu BI; Kong JA ;Chen M;

陈红胜课题组通过模拟高速带电粒子在异向介质中的传播，实验证实了异向介质可以让切伦科夫辐射反向：异向介质所具有的奇特的光学现象，并且可能激励带电粒子探测新技术的发展。研究结果被Nature China列为研究亮点，美国工程院院士、加州大学伯克利分校Xiang Zhang教授专门在Physics上为这项成果写了一篇视角评论。

Associate Prof.Chen Hongsheng and his group members have flipped the direction of the Cherenkov radiation backwards by emulating the fast charged particle passing through a novel left-handed metamaterial. This finding demonstrates yet an exotic optical phenomenon and may inspire the development of new technology for charged particle detection. The research is highlighted by Nature China. Prof. Xiang Zhang, the member of US National Academy of Engineering, highlighted the main contributions of this research with a Viewpoint in Physics.

07) Effect of Cardiac Motion on Solution of the Electrocardiography Inverse Problem

IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING 56(4):923-932,2009

Jiang,MF; Xia, L; Shou,GF; Wei, Q; Liu, F; Crozier, S

本文提出了动态心电逆问题的概念及其解求方法。在获取跳动心脏信息的前提下，采用心脏表面源方法计算得到心外膜电位，然后由仿真得到的心外膜电位计算体表电位。Tikhonov正则化方法主要用于克服静态心电逆问题和动态心电逆问题研究的病态特性。仿真结果显示在QRS波段期间由静态动态心电逆问题方法得到的逆问题解非常接近；而在ST-T波段期间，二者具有很大的误差。研究结果表明，动态心电逆问题求解能够获取更加准确的、合理的心电逆问题解。

Cardiac motion is included in solutions to the electrocardiographic inverse problem. With the inclusion of cardiac motion, the calculated body surface potentials are more reasonable than those in the case of static assumption. In the epicardial potential-based inverse studies, the Tikhonov regularization method is used to handle ill-posedness of the ECG inverse problem. The simulation results demonstrate that the solutions obtained from both the static and the dynamic ECG inverseproblem approaches are approximately the same during the QRS complex period, due to the minimal deformation of the heart in this period. However, with the most obvious deformation occurring during the ST-T segment, the static assumption of heart always has large errors. This study suggests that the inclusion of cardiac motion in solving the ECG inverse problem can lead to more accurate and acceptable inverse solutions.
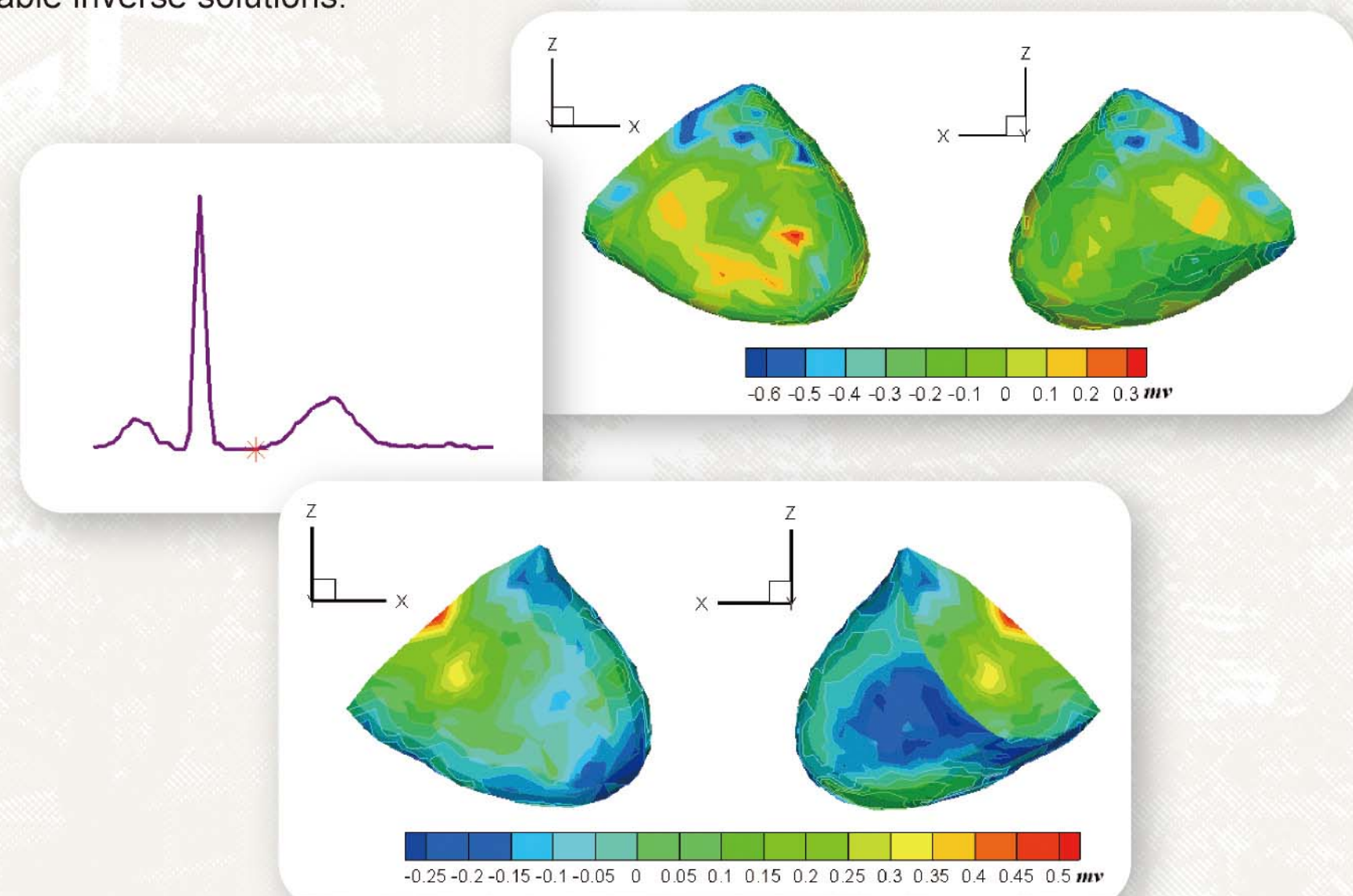
08) A Novel Biomimetic Olfactory-Based Biosensor for Single Olfactory Sensory Neuron Monitoring

BIOSENSORS & BIOELECTRONICS 24(5):1498-1502,2009

Wu, CS; Chen, PH; Yu,H; Liu, QJ; Zong, XL; Cai, H; Wang,P

本文在LAPS单细胞传感器的基础上，把嗅觉信号在嗅觉受体神经元内的传导机理应用于仿生嗅觉传感器的研究，利用MDL12330A对嗅觉信号胞内传导通路的抑制作用，证实LAPS芯片记录到的电信号来源于与其表面耦合的嗅觉受体神经元对气味刺激的响应，并且证实这种仿生嗅觉传感器可以记录到LY294002对嗅觉信号的增强效应，提示其在嗅觉信号传导机理研究中的潜在应用。

This paper presents a novel biomimetic olfactory biosensor for the study of olfactory transduction mechanisms on the basis of light addressable potentiometric sensor (LAPS). To validate the origin of the electrical signals recorded by LAPS, the inhibitory effect of MDL12330A to the olfactory signals of OSNs is tested. The enhancive effect of LY294002 to the responses of OSNs is also investigated. The results suggest it could be a promising tool for the study of olfactory transduction mechanisms.
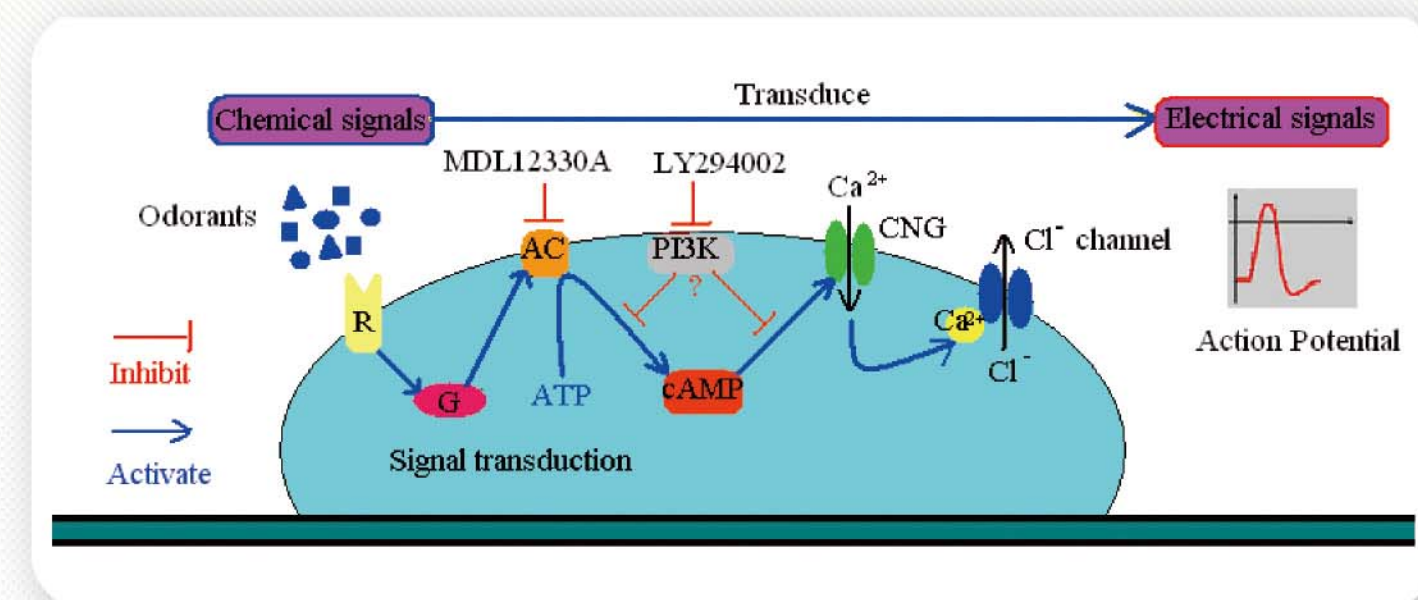
04

人才培养
Education

■ 本科专业 (UG PROGRAMS)

院系 Department/College	本科专业设置 Ug Program
信息与电子工程学系 Dept. of Information Science and Electronic Engineering	信息与通信工程 Information and Communication Engineering
	电子科学与技术 Electronic Science and Technology
光电信息工程学系 Dept. of Optical Engineering	信息工程（光电） Information Engineering
控制科学与工程学系 Dept. of Control Science and Engineering	自动化 Automation
	计算机科学与技术 Computer Science and Technology
	数字媒体技术 Digital Media
计算机科学与技术学院 College of Computer Science and Technology	工业设计 Industrial Design
	软件工程 Software Engineering
	生物医学工程 Biomedical Engineering
生物医学工程与仪器科学学院 College of Biomedical Engineering & Instrument Science	电子信息技术及仪器 Electronic Information Technology & Instrument Science

■学科Disciplines

光学工程 Optical Engineering
- 光学工程 Optical Engineering
- 光通信技术 Optical Communication Technique

仪器科学与技术 Instrument Science and Technology
- 测试计量技术及仪器 Measuring and Testing Technologies and Instruments
- 电子信息技术及仪器 Electronic Information Technology and Instrument

电子科学与技术 Electronic Science and Technology
- 物理电子学 Physical Electronics
- 微电子学与固体电子学 Microelectronics and Solid-state Electronics
- 电路与系统 Circuits and Systems
- 电磁场与微波技术 Electromagnetic Field and Microwave Technology
- 集成电路设计 Integrated Circuits Design

信息与通信工程 Information and Communication Engineering
- 通信与信息系统 Communication and Information System
- 信号与信息处理 Signal and Information Processing

控制科学与工程 Control Science and Engineering
- 控制理论与控制工程 Control Theory and Control Engineering
- 检测技术与自动化装置 Detection Technology & Automation Equipment
- 系统工程 System Engineering
- 模式识别与智能系统 Pattern Recognition & Intelligent System
- 导航、制导与控制 Navigation, Guidance and Control

计算机科学与技术 Computer Science and Technology
- 计算机应用技术 Computer Application Technology
- 计算机软件与理论 Computer Software and Theory
- 计算机系统结构 Computer System Organization
- 数字化艺术与设计 Digital Art and Design
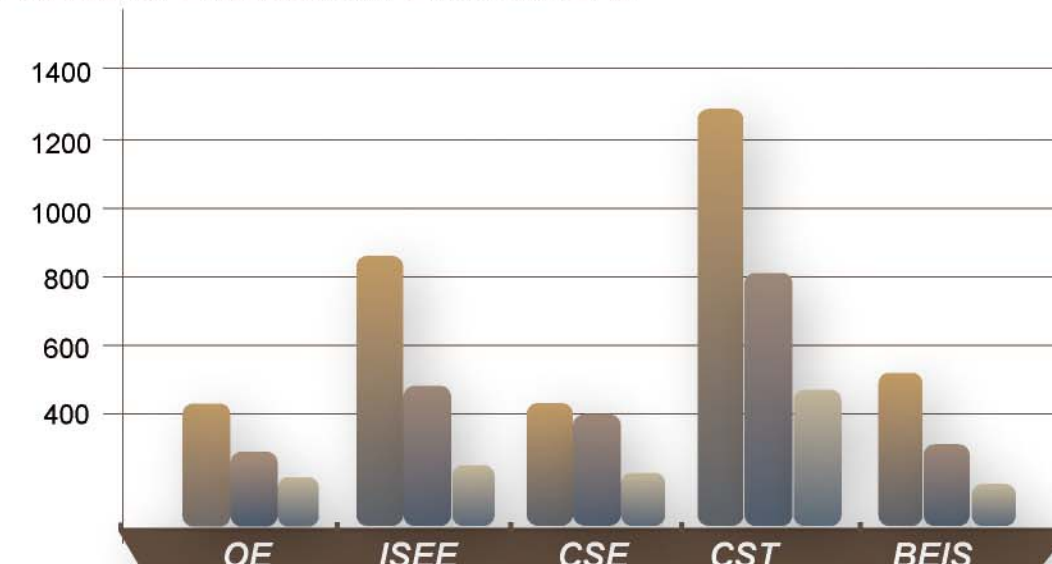- 电子服务 Electronic Service
- 软件工程* Software Engineering*
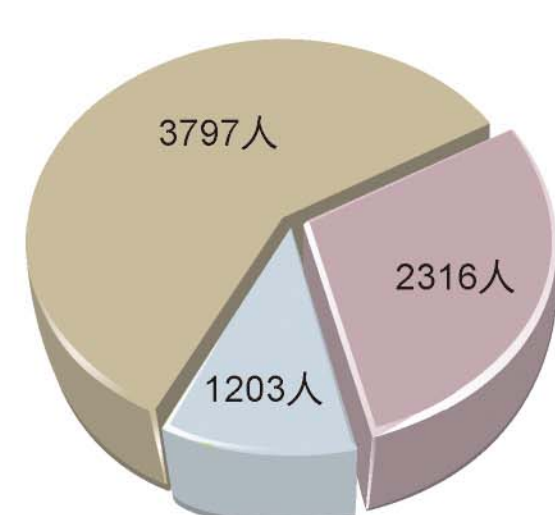- 设计艺术学* Art of Design*

生物医学工程 Biomedical Engineering
- 生物医学工程 Biomedical Engineering

*表示只有硕士点
*Only offer master program

■在校生（人）
Student Education Enrollment

■ 毕业生（人）
Graduates

院系 Department/College	博士生 Doctor	硕士生 Master	本科生 Undergraduate
光电信息工程学系 Dept. of Optical Engineering	36	2	118
信息与电子工程学系 Dept. of Information Science and Electronic Engineering	33	7	340
控制科学与工程学系 Dept. of Control Science and Engineering	31	10	106
计算机科学与技术学院 College of Computer Science and Technology	69	18	368
生物医学工程与仪器科学学院 College of Biomedical Engineering & Instrument Science	22	2	181
软件学院 College of Software Technology		347	
合计 Total	191	386	1113

■ 国家精品课程
National Excellent Course

课　程：定量生理学　　　　　　Course：Quantitative Physiology
负责人：郑筱祥　　　　　　　　Leader：Zheng Xiaoxiang
院　系：生物医学工程与仪器科学学院　　College：College of Biomedical Engineering & Instrument Science

　　"定量生理学"是一门典型的多学科交叉的课程，以物理学原理和数学方法学为基础，以工程方法来解决生理系统的定量机制问题，是生物医学工程专业的核心课程。通过此课程的学习使学生掌握扎实的与生理学相关的数学物理基础知识，主要包括生物热力学、质量输运等知识，同时掌握用工程的方法解决分子、细胞、器官及系统各个层次定量研究的方法和技术。

"Quantitative Physiology" is typical for it's inter-disciplinarily; it's a core course in biomedical engineering. Based on physics theory and mathematic method, this course combines engineering and technology with life science. The course mainly covers the basic theories in bio-thermodynamics，mass transport, cardiology and neuroscience, along with several techniques in bio-system research.

■ 国家级教学团队
National Teaching Team

教学团队：程序设计系列课程　　　Team：Programming Related Series of Curriculum
带 头 人：陈越　　　　　　　　　Leader：Chen Yue
院　　系：计算机科学与技术学院　College：College of Computer Science and Technology

　　程序设计系列课程教学团队以成立于1997年的程序设计类课程小组为基础，围绕程序设计系列课程的培养目标和学生特点，以程序设计能力培养为主线，通过采用国际先进教材和与国际一流企业共建课程推动教学内容改革，通过实施案例驱动的教学和项目模拟的训练推动教学方法改革，通过程序设计评判系统和网络化教学平台的建设推动教学手段的改革，形成了"精品贯穿四年、教学成果丰富、知识结构多样、教学科研并重"的教学改革活跃团队。

The team of Series Curriculum of Programming Related, one of the National Teaching Team of Zhejiang University, is formed from the curriculum-based group for programming which has been established since 1997. According to the training objectives and the particularity of students in different years, training of the programming skills becomes the main line of the team's work. Adopting the most advanced textbooks in the world and building the courses with world-class enterprises to update the teaching contents, adopting case-driven study and by simulating the real projects in the trainings to improve the teaching methodologies, constructing the online judge systems for programming and building the network-based teaching platforms to improve the teaching tools , this team has become a very active team on teaching reforms, with bountiful achievements including National Honored Courses crossing four years of students' study.

■ 国家教学成果二等奖
National Teaching Achievement Award ，2nd Prize

"计算机类本科工程型、复合型、国际化人才培养模式的探索与实践"——— 陈纯，何钦铭，陈越，陈根才等

Cultivating the Ability in Engineering and International Communication with Multiple Disciplines for Undergraduates of Computer —— Chen Chun, He Qinming, Chen Yue, Chen Gencai, etc
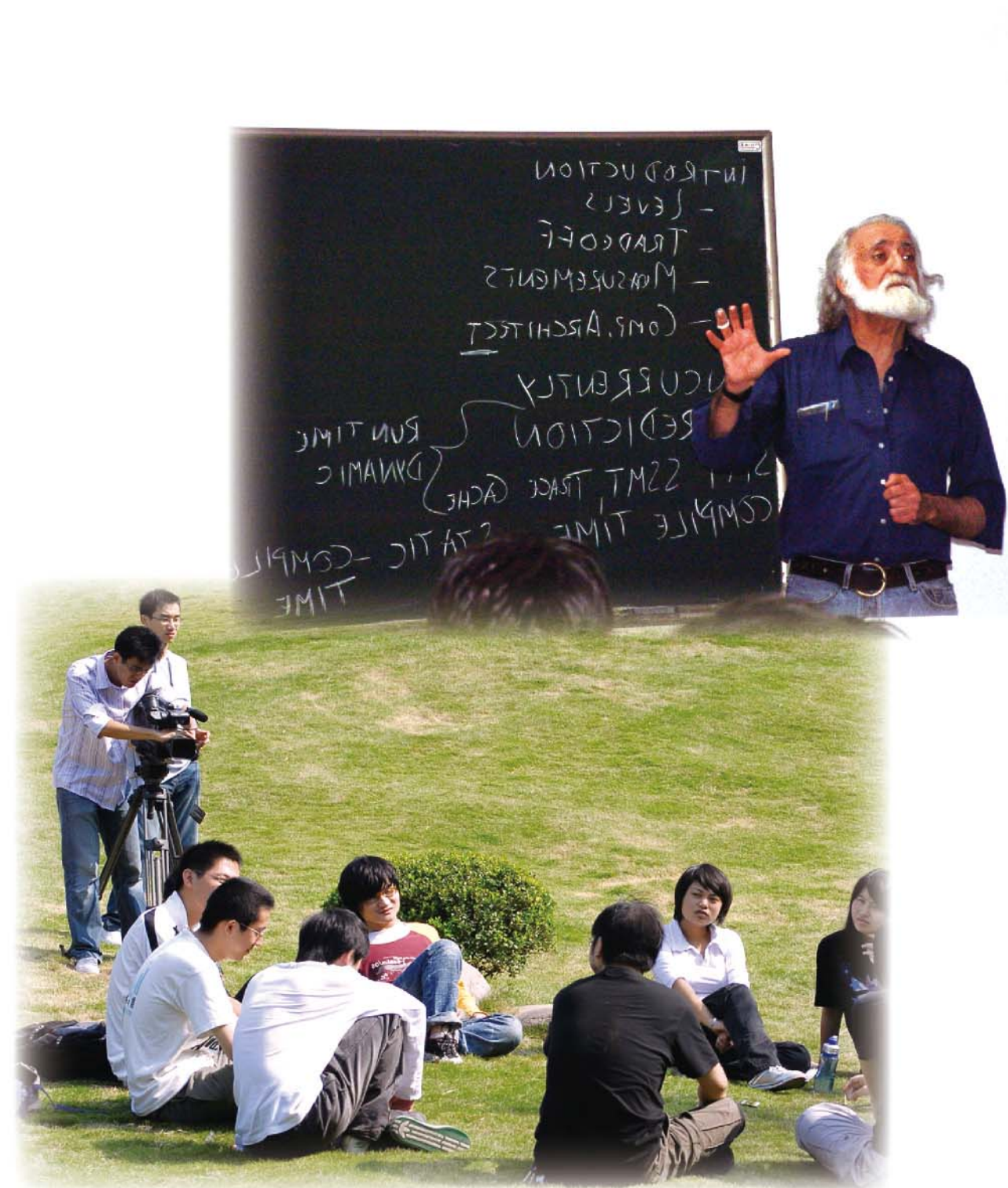
　　该成果针对具有国际竞争力的复合型工程人才培养需求，整合计算机、软件工程、数字媒体技术、工业设计（信息产品设计方向）四个专业的资源，围绕"知识、能力、素质"的目标，确立"以能力培养为导向、课程群建设为基础、学科交叉融合为特色，构建4大教学体系（工程实践能力培养体系、国际交流能力培养体系、人才培养知识体系和教学组织与保证体系）"的教学改革路径，并取得了显著效果。

According to the requirements of talent cultivation on computer technology and engineering areas, integrates the professional resources of undergraduate programs on computer science and technology, software engineering, digital media technology and industrial design (information product design division), establishes paradigms to cultivate abilities in engineering practice and international communication , knowledge structure in multiple disciplines, aiming at "knowledge, ability and quality" and based on refined curriculum cluster.

"高校电子商务专业知识体系建设与创新实践" —— 陈德人、冯雁等

Knowledge System and Innovative Practices of E-commerce in University —Chen Deren, Feng Yan, etc

　　通过建立专业知识体系，构建国家级教学资源库、联合实验环境、共享创新实践平台等举措，在交叉学科专业建设与网络创业人才培养实践方面做出了多项创新性贡献：1）在国内率先制定并发布了《质量工程》实施后的第一个专业知识体系，建立了需求驱动的教学与实践规范体系。2）构建了由298个国内电子商务成功案例为基础的国家级动态教学资源库，率先实现了基于知识体系的教学资源共享与互动创新途径。3）先率建立了基于网络环境的课外实践、项目实训、创业实战三层递进机制与联动平台，为交叉与新兴学科的创新创业型人才培养走出了一条新路。

Through building professional knowledge system and national-level teaching resource pool, setting up enriched experiment context and sharing innovative training platform, this project has extremely contributed to building inter-disciplinary subjects and training network talents. 1）The project has launched the first professional knowledge system after beginning the rules of "quality engineering", to establish the demand-driving system of teaching and training. 2）The project has also fulfilled sharing the teaching resources and interacting with sense of innovation to construct 298 national dynamic teaching resource pools with success cases of electronic commerce. 3）Moreover, the project has taken the lead in building connecting platform and three-progressive steps including extracurricular practice, programs of training and business setting. This has created a perspective for nurturing the talents with sense of creativity in both inter-disciplinary subjects and some newly rising fields.

■ 浙江省教学成果奖
Zhejiang Province Teaching Achievement Award

依托优势学科，探索和实践光学工程本硕博人才一体化培养新模式

Relying on Excellent Discipline, Exploring and Practicing a New Cultivating Mode Which Integrates Undergraduate, Master and Doctor of Optical Engineering into a Talented Group

　　由刘旭教授领衔的团队依托于光学工程国家一级重点学科，实现本、硕、博人才一体化培养的新模式。1）确立"研究型高层次培养"的本科教学定位，全程一体化制定和实施适应学科发展和社会需求的本、硕、博培养方案和课程体系。2）人才培养与科学研究有机结合，多方面构建研究型人才培养平台。3）引进人才和外派培训相结合，建设高水平国际化师资队伍；外送与外招相结合，建立学生双向联合培养和交流机制，多途径拓宽学生国际视野；立体化推进本、硕、博人才培养的国际化进程。该项成果获浙江省教学成果一等奖。

Relying on country-level key discipline of Optical Engineering, a new scheme is achieved which integrates undergraduate, master and doctor of Optical Engineering into a talented group. 1) "High-level undergraduate education based on research" is established. The undergraduate training scheme and curricular system towards comprehensive research and high-level culture for integrated talent education is defined to satisfy the development of discipline and society as well. 2) Combining personnel training and scientific research, education base of talented research is build in various ways. 3) To combine the talented personnel introduction and domestic teachers' abroad training, high-level international faculty team isconstructed. To combine students' abroad training and domestic training, the mechanism of two-way education and communication fostering is set up, and students'vision could be broaden in multi-ways. The integrated talent education is promoted with international characteristic adequately. The Teaching Achievement directed by Professor Liu Xu is awarded the 1st Prize of Zhejiang Province Teaching Achievement Award.

多层次、创新型自动化人才培养体系与实践
The Automation Specialty Program and Practice for Multi-graded and Innovative Students

　　自动化专业培养体系中的专业核心课程构成了专业基本知识点，特色鲜明的专业选修课、系列讲座、学术报告等使学生具有宽广视野，强化科研和动手能力培养，教师的科研成果融合到各个教学环节，本科生参与科研项目，研究生成为科研主力军，面向全校学生的机器人科教实践基地成为浙江大学的著名品牌，形成了从本科生、硕士生、博士生到博士后的多层次、创新型自动化人才培养体系。该项目由褚健、孙优贤教授领衔，获浙江省教学成果二等奖。
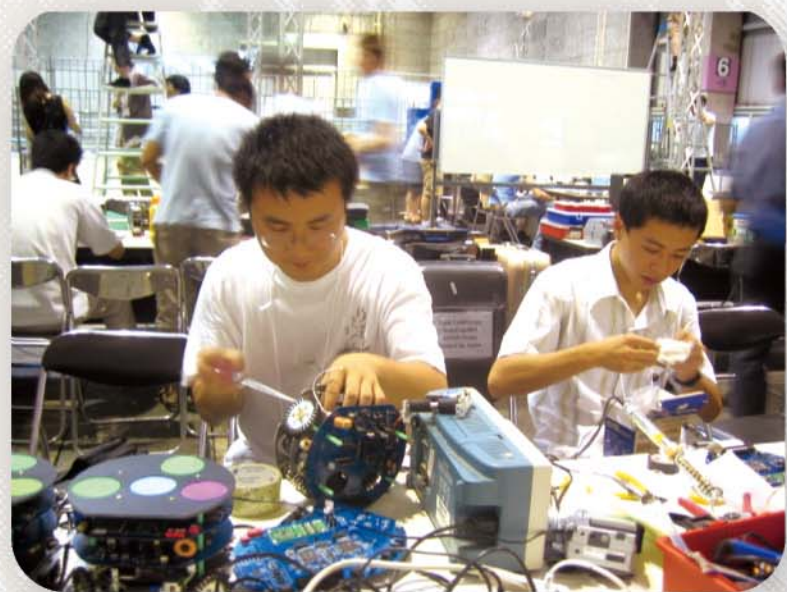
The automation specialty program and practice for multi-graded and innovative students has been established from undergraduate, graduate student, doctoral student to post doctor. The core courses structure the essential knowledge of automation specialty. The student's scope of knowledge is expanded by means of elective courses, series lectures and academic reports with explicit features. The teacher's achievements in scientific research are successfully fused to every teaching unit. Undergraduates participate research projects. Graduate students and doctoral students have become the main science research force. The robot practice base has been become the representativeness of teaching practice at ZJU. The project directed by Prof. Chu Jian and Sun Youxian is awarded the 2nd Prize of Zhejiang Province Teaching Achievement Award.

■国家规划教材
National Level Official Textbook

教材名称 Name	主编 Chief Editor	级别 Level	出版社 Press
电磁场理论与微波工程基础 Fundamentals of Electromagnetic Field Theory and Microwave Engineering	陈抗生 Chen Kangsheng	十一五规划 Eleventh Five-Year Plan	浙江大学出版社 Zhejiang University Press
计算机游戏程序设计 Computer Game Programming	耿卫东 Geng Weidong	十一五规划 Eleventh Five-Year Plan	电子工业出版社 Electronic Industry Press
微处理机原理与接口技术 Principles and Interface of Microprocessors	王汀 Wang Ting	十一五规划 Eleventh Five-Year Plan	浙江大学出版社 Zhejiang University Press

■国际学科竞赛奖
International Disciplinary Competition

竞赛名称 Competition	奖项 Award	获奖名单 Awards List
2009年国际大学生程序设计竞赛亚洲赛区 ACM International Collegiate Programming Contest Asia Regional （ACM-ICPC）	合肥赛区 金牌 Gold Medal, Hefei Site	陈章义等4人
	宁波赛区 金牌 Gold Medal, Ningbo Site	肖东，杭航
	宁波赛区 银牌 Silver Medal, Ningbo Site	庄俊元，欧阳嘉林
	上海赛区 金牌 Gold Medal, Shanghai Site	李成，巫泽俊
	上海赛区 银牌 Silver Medal	吴峻等3人
	武汉赛区 金牌 Gold Medal, Wuhan Site	范雨喆等4人
	泰国赛区 金牌 Gold Medal, Thailand Site	庄俊元，欧阳嘉林
ACM国际大学生程序设计竞赛世界总决赛 ACM International Collegiate Programming Contest World Finals	银牌 Silver Medal	杭航等3人
2009年德国红点概念设计大赛 International Design Competition 'Red Dot Design Award'	设计大奖 （3项） Design Concepts Award	赵艺钧等19人
2009年德国iF概念设计大赛 2009 International Design Competition: iF concept award	设计大奖 （4项） iF concept award (where one is Best Of Best Award)	陶骏等28人
2009年第十三届RoboCup机器人世界杯比赛 The 13th Robot World Cup (RoboCup 2009)	类人组二等奖 2nd Prize, Humanoid Leagues	李深等3人
	小型组二等奖 2nd Prize, Small Size Leagues	吴永海等3人
	救援仿真组二等奖 2nd Prize, Rescue Leagues	王元凯等3人
2009年国际大学生数学建模竞赛 2009 Interdisciplinary Contest In Modeling (ICM)	一等奖 （6组） Meritorious	王　昕等12人
	二等奖 （4组） Honorable Mention	戴　伟等7人
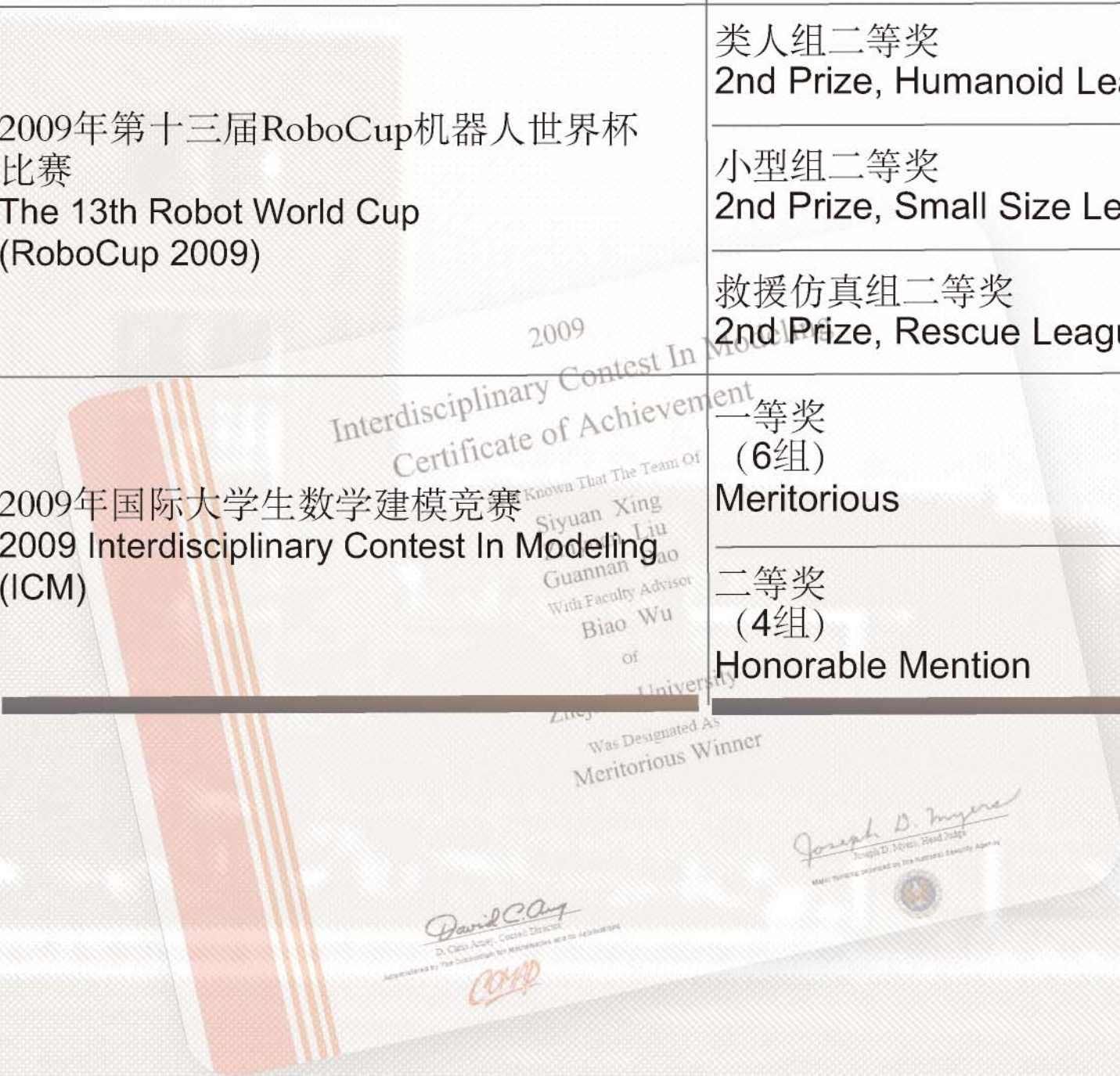
■ 国内学科竞赛奖
Civil Disciplinary Competition

竞赛名称 Competition	级别 Level	奖项 Award	获奖名单 Award List
2009年全国大学生电子设计竞赛 2009 National Undergraduate Electronic Design Contest	国家级 National	二等奖 (4项) 2nd Prize	左旭光等21人
	浙江省 Zhejiang Province	一等奖 (3项) 1st Prize	张锦泽等9人
		二等奖 (2项) 2nd Prize	陈明等6人
		三等奖 (5项) 3rd Prize	张公正等15人
2009年中国机器人大赛暨 RoboCup公开赛 China Robot Competition and the RoboCup China Open	国家级 National	类人组冠军， 全国一等奖 Champion, Humanoid Leagues	詹剑波等3人
	国家级 National	救援仿真组冠军, 全国一等奖 Champion, Rescue Leagues	李俊堃3人
2009年全国大学生数学建模竞赛 China Undergraduate Mathematical Contest in Modeling	国家级 National	一等奖 The 1st Prize	赵耀等3人
		二等奖 The 2nd Prize	赵晓沐
	浙江省 Zhejiang Province	一等奖 The 1st Prize	李承等7人
		二等奖 The 2nd Prize	付鑫等11人
第一届全国光电设计竞赛 The 1st National University Students' Opt-electronic Design Competition	国家级 National	一等奖 (1项) The 1st Prize	李钊
		二等奖 (2项) The 2nd Prize	黄强盛等6人

■ 专项奖
Special Award

奖项 Awards	获奖学生 Student	院系 Department /College
2008-2009学年浙江大学研究生竺可桢奖学金 Chu Kochen Scholarship	张莉苹 Zhang Liping	计算机科学与技术学院 College of Computer Science and Technology
2008-2009学年浙江大学研究生竺可桢奖学金 Chu Kochen Scholarship	陈培华 Chen Peihua	生物医学工程与仪器科学学院 College of Biomedica Engineering & Instrument Science
2008-2009学年浙江大学研究生竺可桢奖学金 Chu Kochen Scholarship	崔艳霞 Cui Yanxia	光电信息工程学系 Dept. of Optical Engineering
浙江大学2008-2009学年本科生竺可桢奖学金 Chu Kochen Scholarship	戴 伟 Dai Wei	控制科学与工程学系 Dept. of Control Science and Engineering
2009年度《王大珩光学奖》 Wang Daheng Optical Scholarship	陈达如 Chen Daru	光电信息工程学系 Dept. of Optical Engineering

■ 本科生深造与对外交流
Further Studies and International exchange

院系名称 Department/College	出国深造人数 Further Study Aboard	出国深造率 Ratio of Further Studies Aboard	读研人数 (本校和外校) Further Study At Home	读研率 Ratio of Further Study At Home	对外交流人次 (本科生) International Exchange (UG Programs)
信息与电子工程学系 Dept. of Information Science and Electronic Engineering	41	13.06%	129	41.08%	29
光电信息工程学系 Dept. of Optical Engineering	20	18.69%	42	39.25%	30
控制科学与工程学系 Dept. of Control Science and Engineering	16	16.3%	37	37.75%	18
计算机科学与技术学院 College of Computer Science and Technology	46	13.98%	95	28.88%	117
生物医学工程与仪器科学学院 College of Biomedical Engineering & Instrument Science	25	13.5%	77	41.6%	47

■ 院系设立的奖学金
Scholarships of Department/College

院系名称 Department/College	奖学金名称 Scholarship	获奖人数 Awarded Number
光电信息工程学系 Dept. of Optical Engineering	聚光奖学金 "Gemcore" Scholarship	6
	敏通奖学金 "Mintron" Scholarship	3
	舜宇奖学金 "Sunny" Scholarship	27
计算机科学与技术学院 College of Computer Science and Technology	"视易之星" 奖学金 "Shiyi Star" Scholarship	10
	"湘瑞教育" 奖学金 "Xiangrui Education" Scholarship	5
	"计算机世界" 奖学金 "Computer World" Scholarship	2
	中加双学位班奖学金 China-Canada Double Degree Scholarship	16
	何志均教育基金奖学金 He Zhijun Education Foundation Scholarship	10
	国际交流奖学金 International Exchange Scholarship	30
	软件、数字媒体基地奖学金 Software, Digital Media base Scholarship	121
信息与电子工程学系 Dept. of Information Science and Electronic Engineering	ISEE荣誉奖 ISEE Honor Award	5
	ISEE创新奖 ISEE Innovation Award	6
	ISEE新人奖 ISEE New Investigator Award	50
	ISEE单项贡献奖 ISEE Contribution Award	10
	ISEE助学金 ISEE Grant	10
	福建海西奖助学金 Fujian Haixi Scholarship and Grant	4
	浙大信电—德州仪器大学生奖助学金 Dezhou Instrument Scholarship and Grant	10
生物医学工程与仪器科学学院 College of Biomedical Engineering & Instrument Science	浙大生仪—德州仪器大学生奖助学金 Texas College Scholarship	10
控制科学与工程学系 Dept. of Control Science and Engineering	春晖奖学金 "Chunhui" Scholarship	6
	温持祥奖学金 "Wen Chixiang"Scholarship	18

■ 优博论文提名奖
Nominated National Excellent Doctoral Dissertation

论文题目：《中国书画艺术电子化创作的初步算法性探索——美、智能与计算》
一级学科：计算机科学与技术
作者：徐颂华
导师：潘云鹤

Title: An Algorithmic Exploration in Chinese Calligraphy and Painting——Beauty, Intelligence and Computation
Discipline: Computer Science and Technology
Author: Xu Songhua
Supervisor: Pan Yunhe

　　论文对中国书画艺术电子化创作中涉及到的若干智能设计与美学创作的重要问题以计算机科学研究的方式展开了一系列算法设计工作与软件工程的实践。主要包括三个方面：1) 计算机智能书法生成的研究，包括计算机智能书法生成算法及与之相应的面向计算机自动书法生成的智能计算机辅助设计系统的研制；2) 国画分解及国画风格动画智能生成技术的研究，具体包括面向中国国画作品图像的笔划分解技术与之配套的基于笔划的国画风格计算机动画智能生成制作技术的研究和相应软件原型系统的研制；3) 交互式中国书画创作的研究，包括面向交互式电子书画创作的算法研究及与之相应的软件平台工具的研制。

The author try to bridge the beauty and intelligence involved in the two traditional forms of Chinese visual arts with the algorithmic possibilities brought about by advanced modern computing techniques. There are three main components:
1) automatic generation of Chinese calligraphy, 2) a stroke-based intelligent Chinese painting decomposition and animation method, and 3) an interactive approach for electronically creating Chinese calligraphy and painting using a physically-based virtual hairy paint brush model and an expressive digital pigment behavior simulation model.

■ 05

海外交流
International Exchange and Cooperation

　　学部2009年教师出访参加学术会议、合作交流300人次左右，接待130多人次国外学者来访进行学术交流，举办国际会议4次。学部与日本早稻田大学签订了学生交流备忘录，生仪学院与美国威斯康辛大学签订了联合培养学生交流合作计划。

About 300 teachers visited the participation academic conference, the cooperation research exchange study and so on. More than 130 world-renowned scholars have been invited to visit FIT for lectures and academic exchanges. It hosted about 4 international conferences successfully. The student exchange memorandum of understanding between FIT and IPS of Waseda University has been established. Student exchanges and cooperation programs between College of Biomedical Engineering & Instrument Science and University of Wisconsin has been signed.

第11届国际计算机辅助设计与图形学学术会议
The 11th IEEE International Conference on Computer-Aided Design and Computer Graphics (IEEE CAD/Graphics) 2009

由中国计算机学会和IEEE北京分部联合主办的第11届IEEE计算机辅助设计与图形学国际学术会议(IEEE CAD/Graphics 2009)于2009年8月19－21日在安徽省黄山市举行。本届会议由浙江大学CAD&CG国家重点实验室和合肥工业大学计算机学院联合承办。

The 11th IEEE International conference on Computer-Aided Design and Computer Graphics (IEEE CAD/Graphics 2009), co-sponsored by China Computer Federation and IEEE Beijing Section, was held on August 19-21, 2009, in Yellow Mountain City, China. It is organized by the State Key Lab of CAD&CG, Zhejiang University and School of Computer & Information, Hefei University of Technology.

2009年电磁学研究进展国际学术研讨会
Progress in Electromagnetics Research Symposium (PIERS)

由信电系国际电磁科学院浙江大学分院与北京交通大学、麻省理工学院（MIT）电磁波理论与应用研究中心等单位共同主办的第25届2009年电磁学研究进展国际学术研讨会（PIERS）于2009年8月18-21日在北京举行。PIERS旨在为现代电磁学理论的研究、发展和运用提供一个良好的国际学术交流平台。

The 25th Progress in Electromagnetic Research Symposium (PIERS, 2009) was held on Aug. 18-21 in Beijing, hosted by Department of Information Science &Electronic Engineering, ZJU, Beijing Jiaotong University and Wave Theory and Application Research Center, MIT. PIERS always provides an international forum for reporting progress and recent advances in the modern development of electromagnetic theory.

光学薄膜前沿国际会议
Frontiers of Optical Coatings, FOC 2009

由中国光学学会光学薄膜专委会举办，浙江大学现代光学仪器国家重点实验室承办的光学薄膜前沿国际会议（Frontiers of Optical Coatings, FOC 2009）于2009年10月11日－15日在西安建国饭店召开。FOC 2009是20年来在中国举办的最高层次的光学薄膜研讨会，也是国际上该领域内规模最大、水平最高的学术会议之一。

The international conference on Frontiers of Optical Coatings (FOC) was held on October 11-15, 2009, hosted by the Chinese Optical Society organized special committees, organized by State Key Laboratory of Modern Optical Instrumentation, Zhejiang University. It is the highest level of optical thin film seminars held in China, as well as one of the largest and the highest level of academic conference in the field.

生物医学工程前沿国际研讨会
Symposium on Frontier of Biomedical Engineering

11月8日至9日，在浙江大学生仪学院召开了"浙江大学生物医学工程前沿国际研讨会暨生物医学工程教育部重点实验室学术委员会会议"。器官移植专家郑树森院士、东南大学等著名高校的生物医学工程学界著名学者以及海外的加州大学洛杉矶分校、威斯康星大学、英国牛津大学、哥伦比亚大学、美国Monell化学敏感技术中心等著名高校和研究机构的知名教授学者参加了本次研讨会

On November 8 to 9, Symposium on Frontier of Biomedical Engineering was held at College of Biomedical Engineering & Instrument Science, Zhejiang University. Many famous professors from University of California, Los Angeles, University of Wisconsin, Oxford University, Columbia University attended the seminar.

06
09要闻
2009 News
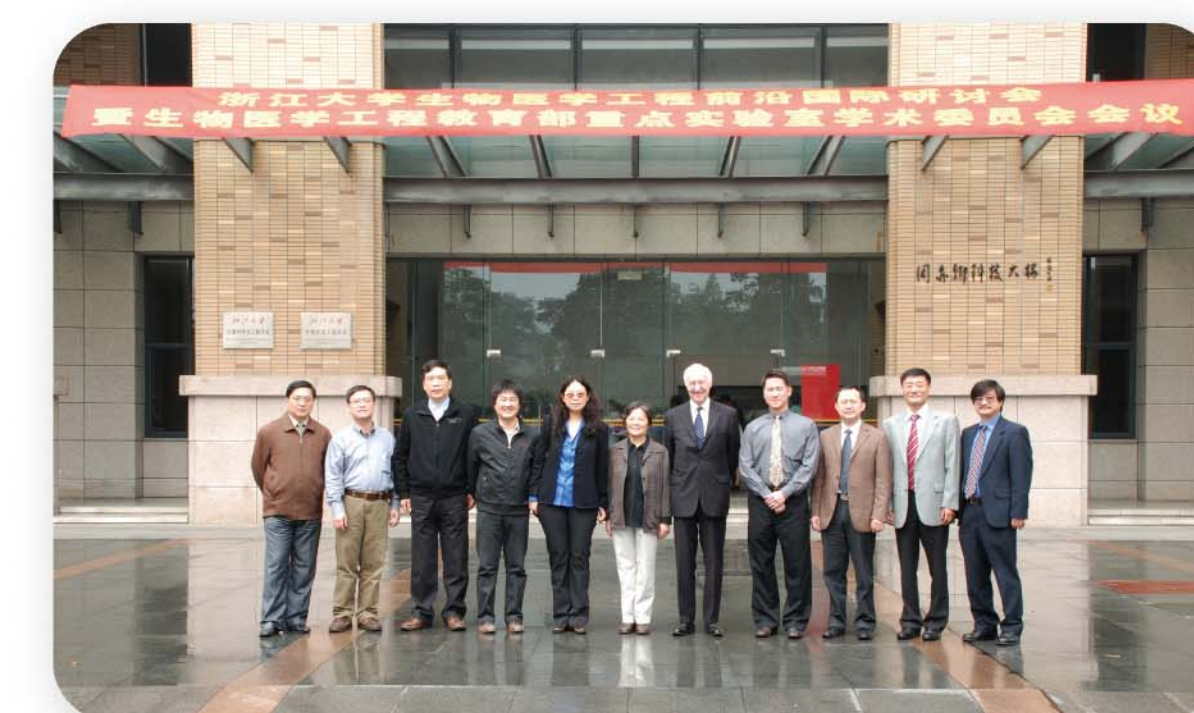
2009年5月21日，在建校112周年之际，浙江大学工学部和信息学部成立仪式及学术报告会在紫金港校区举行。

On May 21, at the time of 112 Anniversary of Zhejiang University(ZJU), the inauguration of Faculty of Engineering and Faculty of Information Technology（FIT）as well as academic report was held in Zijingang Campus, ZJU.

院士报告会
Report by Lin Xiangdi

2009年7月19日上午，我国光学和光电跟踪测量系统工程研究的主要开拓者之一，知名的光学技术与仪器工程专家和学科带头人林祥棣院士访问信息学部，在玉泉校区为教授和青年骨干教师作学术报告并与大家座谈、讨论。

On July 19, Lin Xiangdi, Academician of the Chinese Academy of Engineering, one of the main pioneers of optics and optical tracking measurement systems, the famous expert of optical technology and instrumentation engineering and academic leaders, visited Faculty of Information Technology for academic report and discussed with professor and young teachers.

11月~12月，学部与蓝田学园合办了"走进信息学部"系列活动，举办了有600余名学生参与的网上知识竞赛，由各院系进行专业宣讲、实验室参观，并成功举办了"走进信息学部"颁奖晚会暨蓝田学园博雅论坛，邀请了公共管理学院余潇枫教授作了"大学精神与领袖人才"的报告。

In Nov.~ Dec.2009, Series of activities on coming into FIT, co-organized by FIT and Lantian Xueyuan, was held in Zijingang campus. Over 600 students participated in online knowledge contest. Awards party of online knowledge contest was also hosted successfully and Professor Yu Xiaofeng was invited to make a report of "University Spirit and Leadership Talent".

学科发展战略研讨
Seminar on Science Research

7月17日，学部召开学科发展战略研讨会，就学部内外学科间的交叉合作、各学科新的生长点进行探讨。

On July 17, Seminar on development of disciplines was held to discuss the interdisciplinary cooperation inside the faulty and new growth points of various disciplines

刘承教授获全国"五一"劳动奖章

光电信息工程学系刘承教授以其在科学研究领域的突出贡献获全国"五一"劳动奖章。

Prof. Liu Cheng of Department of Optical Engineering won the National "May 1st" Labor Medal

浙江大学信息学部

编　　后

在2010年暑期的酷热中，由信息学部办公室主编的《Annual Report 2009》终于和大家见面了……

年报成稿过程中，得到学部、院系领导的关心和指导，得到各位老师、各位同仁支持和帮助。信息学部各院系职能科室的同仁们收集和整理了大量翔实的第一手素材，老师们提供了研究课题、研究成果的相关资料，尤其是图片资料的收集过程中，部分内容需要现场拍摄，有关研究所、实验室和教学实验中心老师们、同学们的全力配合和帮助，让我们的工作得以顺利完成。这些都让我们感受到团队的力量，办公室的同事们齐心协力，埋头苦干，推敲每一段文字，斟酌每一个细节……值此文稿付梓之际，对所有关心、支持我们工作的领导、专家和同仁们表示由衷的感谢！

编　者
2010年7月于求是园

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