



医疗电子主题专区
Medical electronics
Segment



国际医疗电子创新论坛
International Medical Electronics Innovation Forum

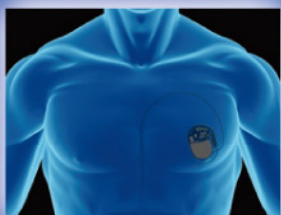
日期: 2012年3月20日
地点: W4馆, 现场论坛区
主办单位: 德国慕尼黑国际博览集团
支持单位: 中国仪器仪表学会医疗仪器分会

Date: March 20, 2012
Venue: Hall W4, Onsite forum area
Organizer: Messe München International
Supporter: China Instrument and Control Society
- Medical Instrument TC

时间 Time	演讲题目 Presentation	演讲嘉宾 Speaker
主持人: 复旦大学信息科学与工程学院副院长, 复旦大学生物医学工程中心主任, 汪源源教授, 博导 Chairman: Vice Dean of Information Science & Engineering School of Fudan University, Director of Biomedical Engineering Centre of Fudan University, Ph. D., Professor Yuanyuan Wang		
09:45-10:15	上海医疗器械产业链情况的探讨 Discussion on Shanghai medical instrument industry chain status	上海医疗器械行业协会副秘书长, 上海医疗器械股份有限公司总工程师, 王云龙 Yunlong Wang, Vice Head Secretary of Shanghai Medical Instrument Trade Association (SMITA), Chief Engineer of Shanghai Medical Instruments Co., Ltd.
10:15-10:45	移动医疗 - 机遇和挑战 Moving healthcare into the home - challenges and opportunities	意法半导体, Kenji Tan, 医疗保健部, 业务发展总监 STMicroelectronics, Kenji Tan, Business Development Director, Medical and HealthCare Segment
10:45-11:15	Medical electronics - the next big engine for semiconductor industry	清华大学微电子学研究所副所长, 王志华教授 Tsinghua University, Zhihua Wang, Professor and Deputy Director, Institute of Microelectronics
11:15-11:45	超声成像与肝癌图像导航消融治疗	飞利浦亚洲研究院, 李俊博, 高级研究员, 项目经理 Philips Research Asia, Junbo Li, Senior Scientist & Project Manager
11:45-13:30	参观 慕尼黑上海电子展、慕尼黑上海电子生产设备展 Visit electronica China & productronica China	
主持人: 上海大学通信与信息工程学院副院长, 上海大学生物医学工程研究所所长, 严壮志教授, 博导 Chairman: Assistant Dean of Communication and Information Engineering Institute of Shanghai University, Head of Biomedicine Engineering Institute of Shanghai University, Ph. D., Professor Yan Zhuangzhi		
13:30-14:00	超声乳腺肿瘤计算机筛查系统的设计与应用 Design and application of a computer sifting system for breast tumors from ultrasound images	复旦大学信息科学与工程学院副院长, 复旦大学生物医学工程中心主任, 汪源源教授, 博导 Vice Dean of Information Science & Engineering School of Fudan University, Director of Biomedical Engineering Centre of Fudan University, Ph. D., Professor Yuanyuan Wang
14:00-14:30	医疗电子元器件设计解决方案 Component design solution on medical electronics	村田(中国)投资有限公司, 何申请, 高级市场工程师 Murata (China) Investment Co., Ltd., Lancer He, Senior Marketing Engineer
14:30-15:00	待定 TBA	GE中国医疗集团 GE Healthcare
15:00-15:30	待定 TBA	待定 TBA



医疗电子主题专区 Medical electronics Segment



名师名企 | Speaker Team



李俊博 | Junbo Li
高级研究员, 项目经理 | Senior Scientist, Project manager
飞利浦亚洲研究院 | Philips Research Asia



- 2010年至今 上海飞利浦亚洲研究院高级研究员, 项目经理
研究项目: 超声成像与肝癌图像导航消融治疗
- 2009-2010年 英国牛津大学工程科学系生物医学工程研究所高级研究员
研究项目: 再生性根键修复与富血小板凝胶制备及机理
- 2005-2009年 英国牛津大学工程科学系Wolfson医学视觉实验室研究员
研究项目: 基于超声成像的乳腺癌检测与病人管理系统研究
- 2008-2009年 英国牛津大学工程科学系生物医学工程研究所研究员
研究项目: 计算机辅助高强度聚焦超声肿瘤治疗
- 2002-2005年 英国牛津大学工程科学系Wolfson医学视觉实验室博士后研究员
研究项目: 基于有限元分析的超声弹性成像
- 1998-2001年 西安交通大学生命科学院生物医学工程专业博士研究生
软组织运动估计与超声弹性成像

【演讲题目】超声成像与肝癌图像导航消融治疗

【摘要】肝癌是世界上最常见、恶性程度最高的肿瘤之一。在中国, 2010年新增肝癌患者人数为448200, 每年有320000位患者死亡, 五年存活率仅为37%, 同时肝癌术后的5年复发率高达75%。目前肝癌已成为浙江、江苏、广东与广西四省致死率最高的疾病。超声成像作为一种实时、简便、无辐射、价格便宜的医学影像手段, 在癌症的诊治中得到广泛的应用。热消融肿瘤治疗, 包括射频消融、微波消融、HIFU等, 是肿瘤的一种有效的根治性治疗手段, 已被应用于肝癌、前列腺癌、肺癌、骨癌等多种癌症的治疗。临床实践表明, 对于小肝癌, 局部消融治疗的远期疗效与手术切除相当, 并且病人损伤小, 并发症发病率低。本项目针对基于图像导航的肝癌热消融治疗这一问题, 研究肝癌热消融治疗手术方案制定、术中检测与术后评价的方法与系统, 提高实体肿瘤热消融治疗远期疗效。



王志华 教授 | Prof. Zhihua Wang
清华大学微电子学研究所 副所长
Deputy Director, Institute of Microelectronics, Tsinghua University



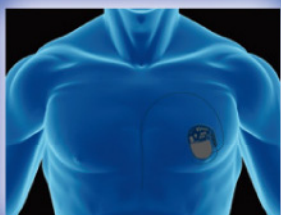
【演讲题目】Medical electronics - the next big engine for semiconductor industry

王志华教授主要从事CMOS RF电路和生物医学集成系统领域的研究工作, 在该领域开展了长期研究并取得了丰厚的研究成果, 其中已有很多成果得到了应用。在26年的学术生涯中, 王教授与他的学生们合作发表了420篇学术论文, 出版了4本著作, 申请63项专利(其中发明专利60, 外观专利3), 并承担了超过15项国家研究项目。Zhihua Wang (M'99-SM'04) received the B.S., M.S., and Ph.D. degree in electronic engineering from Tsinghua University, Beijing, China, in 1983, 1985, and 1990, respectively. In 1983, he joined the faculty at Tsinghua University, where he is a full Professor since 1997 and Deputy Director of Institute of Microelectronics since 2000. From 1992 to 1993, he was a visiting scholar at Carnegie Mellon University, USA. From 1993 to 1994, he was a visiting researcher at K.U. Leuven, Belgium. His current research mainly focuses on CMOS RFIC and biomedical applications. His ongoing work includes RFID, PLL, low power wireless transceivers, and smart clinic equipment with combination of leading edge CMOS RFIC and digital imaging processing techniques. During his 26 years academic career, plentiful results were achieved and some results have been commercialized and received industrialization successes. He co-authored with his students has more than 400 published papers, 60 filed patents and 5 books.

【Abstract】 Wireless medical and health care applications are emerging as one of the major driving forces for today's semiconductor industry. On the other hand, the advanced CMOS IC technology, as the enabling technology to implement those implantable/portable medical devices, is bringing up a new revolution in the personal medical/healthcare area. In this talk, the system architecture of typical wireless medical and health care applications will be discussed, followed by detailed analysis on the design requirements and challenges. The key design considerations to implement the building blocks of ultra-low power CMOS IC's for those applications will be examined, including the sensor interface, signal processing, wireless transceivers and embedded controllers. Two design examples will be given to illustrate how those design principles are applied to the ultra-low-power IC's dedicated for those specific applications.



医疗电子主题专区
Medical electronics
Segment



名师名企 | Speaker Team



汪源源 博士、教授、博士生导师 | Ph. D., Professor Yuanyuan Wang
复旦大学电子与信息工程学院副院长

Vice Dean of Information Science & Engineering School of Fudan University
复旦大学生物医学工程中心主任 | Director of Biomedical Engineering Centre of Fudan University



【演讲题目】超声乳腺肿瘤计算机筛查系统的设计与应用

【Presentation】 Design and application of a computer sifting system for breast tumors from ultrasound images

从事医学超声工程和医学信号图像处理的科研与教学，曾主持国家自然科学基金、科技部、教育部和上海市教委、科委等十多项科研项目。受教育部优秀年轻教师基金及其跟踪计划、教育部骨干教师基金、上海市青年科技启明星计划及其跟踪计划、上海市曙光计划和上海市优秀学科带头人计划的资助。在国内外各种学术杂志发表论文360多篇，出版教材2本，合作著作四部。

Prof. Yuanyuan Wang received his Ph.D. degrees in electronic engineering from Fudan University, Shanghai, China, in 1994. During 1994 to 1996, he was a Postdoctoral research Fellow with the School of Electronic Engineering and Computer Science at University of Wales, Bangor, UK. In May 1996, he went back to Department of Electronic Engineering at Fudan University as an associate professor. He was then promoted to a full professor in May, 1998. He is currently the director of Biomedical Engineering Center and vice Dean of Information Science and Engineering School at Fudan University. He is also the author or coauthor of 7 books and 360 research papers. He accepted twice The Young Scientist Award from the International Union of Radio Science. He won once First-rate, twice Second-rate and thrice Third-rate Award of Shanghai Science and Technology Development; once Golden, twice First-rate and thrice Second-rate Award of Shanghai Duty Invention, etc. His research interests are in (1) ultrasound blood flow measurement ---noninvasive detection of microemboli, Doppler blood flow signal simulation and feature analysis for stenosed vessels; (2) ultrasound image processing---ultrasound image speckle reduction and auto segmentation; (3) computer-aided-diagnosis system based on ultrasound images---breast tumor, cervical lymph nodes and fetal; (4) thermoacoustic tomography---reconstruction algorithm, compensation for acoustic speed heterogeneity; (5) multi-mode medical image fusion.

【摘要】乳腺癌已经成为全球范围内影响女性健康的第一大祸根，高居女性恶性肿瘤发病率的首位。乳腺癌筛查可以使乳腺癌年死亡率风险下降40%左右。超声检查具有无损、实时、价格低廉等特点，已成为乳腺癌早期检查和诊断的首选方法。随着乳腺超声筛查的推广，当大量或海量病例数据和信息汇聚时，仅靠有经验的医生人工分析及判断，效率低且工作量巨大，因此急需建立一个全新的计算机辅助筛查系统。我们建立的计算机辅助乳腺超声筛查系统首先获取按一定程序扫查的全乳的超声乳腺图像视频序列，然后采用基于纹理和位置特征对像素点进行分类的方法，自动获得视频序列中所有的“疑似异常区域”，将获得的“疑似异常区域”送入自动分类器进行判别，去除正常的组织区域，识别出超声乳腺图像中的“可疑病灶”。对于识别出的“可疑病灶”，可以请医生仔细复查，或送入下一步的乳腺肿瘤良性分类器进行自动判别。初步的应用中，对20例患者共包含200个乳腺超声视频序列进行识别。建立的计算机辅助筛查系统在保证假阳性小于40%的情况下，基本可以识别所有的异常区域。进一步的乳腺肿瘤良性分类器也具有很高的区分度。结果表明，该系统可以自动识别和定位乳腺超声图像中的异常区域，并进一步区分乳腺肿瘤的良恶性，在保证较高诊断正确性的前提下提高了诊断的效率和客观性，有望起到乳腺肿瘤超声筛查的作用。

医疗电子主题专区
Medical electronics
Segment



名师名企 | Speaker Team



王云龙 | Yunlong Wang
上海医疗器械行业协会副秘书长
Vice Head Secretary of Shanghai Medical Instrument Trade Association



【演讲题目】上海医疗器械产业链情况的探讨
【Presentation】 Discussion on Shanghai medical instrument industry chain status

曾经担任上海医疗器械厂技术科长、总师室主任、总工程师。担任过上海医疗器械（集团）有限公司、上海医疗器械股份有限公司技术发展部部长。担任过上海齿科器械厂厂长，上海胜利医疗器械有限公司董事长，上海非曼特医疗器械有限公司董事长。现任上海医疗器械股份有限公司总工程师、上海医疗器械行业协会副秘书长。
Once assumed the position of Chief of Technology Department, Chief of Technology Department, Manager of Office of Chief Engineers and Chief Engineer of Shanghai Medical Instruments Factory. Once assumed the position of R&D Director of Shanghai Medical Instruments Co., Ltd. and CEO of Shanghai Victor Medical Instruments Co., Ltd. Now he assumes the Chief Engineer of Shanghai Medical Instruments Co., Ltd. and Vice Head Secretary of Shanghai Medical Instrument Trade Association (SMITA).



Kenji Tan
医疗保健部，业务发展总监
Business Development Director, Medical and HealthCare Segment
意法半导体 | STMicroelectronics



【演讲题目】移动医疗 – 机遇和挑战
【Presentation】 Moving healthcare into the home – challenges and opportunities

陈清河，1980年毕业于新加坡理工学院，拥有电子工程和MBA学位及超过30年在多间公司的制造，产品工程和销售等不同部门的工作经验。他在1988年加入意法半导体，负责半导体产品的市场，销售及业务拓展。陈先生现任职业务拓展总监，负责为医疗保健事业部制定针对中国医疗电子市场这一增长最迅速区域的策略，拓展及推广活动，借助意法半导体在标准产品如微控制器，微电机系统，高性能模拟器件及专用标准订制产品的优势，推广针对医疗设备的芯片和系统解决方案。
With more than 30 years' experience in manufacturing, product engineering and sales in different companies and roles, Kenji Tan, graduated from the Singapore Polytechnics majoring in Electronic Engineering in 1980 and a degree for Business Administration, joined STMicroelectronics in 1988, responsible for the semiconductor sales, marketing and business development. Appointed as Business Development Director of STMicroelectronics Medical and HealthCare Segment, he is currently focusing on promoting silicon or systems based solution for medical devices, leveraging on the ASSP (application specific standard product) and standard products (microcontroller, MEMS, high performance analog) product portfolio. Kenji Tan has the responsibility for the strategy, growth and marketing mix related subjects in one of the fastest growing regions, China, for the medical related businesses.

【摘要】当前的医疗体制，控制医疗保健费用的增长成为主要挑战，半导体技术将使移动医疗成为可能并取得突破性进展。我们将不用再到医院去接受观察，诊断和监护，情况恶化时甚至可以得到24小时不间断的监护及及时的诊治。通过创新的人体无线传感器网络，患者可以正常地居家生活，减少住院时间并同时与医生保持持续的联系。远程监护产品能够提供针对慢性病管理，如糖尿病和心脏病等的各种服务。

【Abstract】 In the era of modern health care provision, the cost of providing affordable healthcare solution is becoming a major challenge. Semiconductor technology will provide a viable solution to this challenge, allowing telemonitoring as a major breakthrough to change the operating dynamic of health provision. Patient monitoring, observation and diagnosis, no longer rooted in the consulting room, provide 24-hour surveillance and timely clinical interventions when conditions deteriorate. Thanks to the innovative Wireless Body Sensor Networks, patients can wear it while living normal lives at home and patients could avoid or reduce hospital stay while still being in constant contact with their healthcare providers. Tele-monitoring products are delivering these services across a range of chronic conditions such as diabetes and heart disease.

医疗电子主题专区
Medical electronics
Segment



名师名企 | Speaker Team



何申靖 | Lancer He
高级市场工程师 | Senior Marketing Engineer
村田(中国)投资有限公司 | Murata (China) Investment Co., Ltd.



【演讲题目】医疗电子器件设计解决方案

【Presentation】Component design solution on medical electronics

何申靖, 2002年毕业于上海大学市场管理专业。拥有从事主动元器件销售及市场策划7年经验, 特别是医疗电子和新能源等方面。

现任村田(中国)投资有限公司战略企划科高级市场工程师, 负责村田新产品新技术在中国地区的市场和推广工作。包括医疗, 电表等行业的市场活动, 致力于为客户提供最新的解决方案和服务。目前主要针对新能源与智慧医疗保健等市场和应用策划和提供包括传感器、无线模块等产品。

Lancer He, After graduated Marketing Major of Shanghai University in 2002, engaged in sales and marketing of active component especially for Medical Electronics, New Energy, etc. for 7 years.

After joined Murata, as marketing leaders of Medical Electronics field, analyze the market as electronics point of view, together with customer support by providing component solution.

Based on a lot of electronics component understanding, providing new solution like wireless communication, sensor, etc.. to the Medical Electronics and Healthcare applications.

【摘要】在老龄化社会不断加剧的情况下, 医疗保健的概念越来越得到关注。同时, 电子数字化发展使医疗保健设备变得日益智能和实用。村田作为一家被动元器件的领军企业, 为医疗电子提供具备高度可靠性的电子元件。借此论坛为平台, 带来最新的无线通信技术, 对未来医疗电子设备的新面貌进行构想。同时, 还将介绍先进的传感器技术来带给医疗领域新功能, 电源模块来支持医疗设备的可靠性。

【Abstract】Murata Manufacturing Co., Ltd set up in 1950, and till now it has already been about 60 years. In this period, we always keep "Innovator in Electronics" in mind and support the electronic industry with new technologies. Now in China, we have already had 4 plants and 5 sale companies. All these net could help Murata to support customers more efficiently.

The electronic components of Murata exist everywhere in our life. The product of Murata could be used not only in Digital Appliance, PC, Mobile, but also in Automotive Electronics. We have prepared different solution for these fields. For example, MLCC, SAW filter, Ceramic Resonator, Sensors, Buzzers, Short-range Wireless Communication Module (Including BT Module), EMI filter, Inductor (Coil), Thermister, and so on.

In China, the web site of Murata (www.murata-china.com) could provide the detail information of our product and some design tools as well. In addition, we can help customers to do the EMC test for free. In the near future, the anechoic chamber will be set up, so we could serve our customers more attentively.