

# Research and Development of Optical Fiber Sensors in Singapore

## Abstract

In recent years, optical fiber sensors have developed rapidly in Singapore. Nanyang Technological University, National University of Singapore and several research institutes under Agency for Science, Technology and Research (A\*STAR) are studying on various types of optical fiber sensing devices for different applications. In this talk, we would like to briefly introduce the research work on optical fiber sensors area in Singapore. We will mainly present the contributions of Institute for Infocomm Research (I2R) in A\*STAR and Network Technology Research Center (NTRC) in Nanyang Technological University, including optical fiber sensors in aircraft health monitoring and medical care applications and optical fiber cavity ring-down sensors in the chemical and bio-sensing applications. Finally, based on our current work, the future work on optical fiber sensing area will be described as well.

## Biography

Dr. Ni Na received her B.S Degree (1<sup>st</sup> Honor) and M.S. Degree (1<sup>st</sup> Honor) from Department of Applied Physics, Harbin Institute of Technology in 2003 and 2005 respectively. From Jul. 2004, she studied in Network Technology Research Center (NTRC), Nanyang Technological University, Singapore as a Ph.D. student and received her Ph.D. Degree in Jan. 2009. Since Sep 2008, she works in RF & Optical Department, Institute for Infocomm Research as a Research Fellow. Her research area includes optical fiber sensors and their applications, sensor packaging, fiber grating, optics modulation and signal processing techniques, fiber-based system etc. She has published over 30 journal papers and international conference papers in fiber related areas.

## “光纤传感器在新加坡的研究与发展”

### 摘要

近几年新加坡在光纤传感方面的研究发展迅速。南洋理工大学、新加坡国立大学和新加坡科技局下数个研究所都在致力于研究开发各类光纤传感器件。在这里，我们简要介绍一下新加坡在光纤传感方面的研究方向，重点介绍一下新加坡资讯通信研究所和南洋理工大学网络技术实验中心在光纤传感方面的工作，包括光纤传感器在飞机检测及医疗方面的应用和光纤腔振荡生化传感器的研究。最后，结合我们目前的工作阐述未来光纤传感器在新加坡的发展趋势。

**倪娜**博士目前为新加坡资讯通信研究所射频与光电子部的研究员。2003年本科毕业于哈尔滨工业大学应用物理，2005年获得哈尔滨工大学应用物理系光学专业硕士。2004年7月起在新加坡南洋理工大学网络技术研究中心读博，于2009年1月拿到博士学位。2008年起一直在新加坡资讯通信研究所射频与光电子部门从事光纤传感器在飞机检测及医疗方面的研究。研究方向包括：各类光纤传感器，布拉格/长周期光栅，光学调制及信号处理技术，光学系统设计，已发表SCI论文及国内外会议文章30余篇。