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研究方向：可见光通信



室内可见光定位

在第一代移动通信系统商业化三十年之后，‘无线网络接入’已和水、电、公路等一样成为提供人们生活必需品的基础设施。于此同时，自 2007 年始，基于 iOS 和 Android 系统的智能终端彻底改变了人们的生活方式。地铁上、街道旁、商店里，随时可见人们拿出‘心爱的’手机搜索或者分享信息，而这一切都需要‘泛在网络 (Ubiquitous Connectivity)’。即通信网络需要为用户在任何时间、任何地点（无论室外还是室内）提供无缝的网络服务。

那么，如何提供泛在网络服务，特别是如何在室内环境下提供高质量的网络覆盖，如何解决有限的频谱资源等一系列问题就成了下一代通信系统急需解决的关键问题。

在过去的几年中，白光 LED 因其能源效率、产品寿命、低成本、颜色多样性和环境保护等多方面优势正大规模取代传统的白炽灯和节能灯来提供照明。我们只需环顾四周就可以看到无处不在的 LED 照明设施。同时，LED 也确立了消费电子产品屏幕市场的主导地位。例如，电视屏幕、手机屏幕、互动广告屏幕等。实际上，基于 LED 的照明和显示系统已经深深的融入现代人的生活。而 LED 在照明之外，还可以进行高速率的数据传输。总而言之，无处不在的 LED 设施和其与生俱来的可见光频谱资源让‘可见光通信’系统成为室内数据传输极具吸引力和竞争力的解决方案。

具体而言，我们小组在以下方向进行探索，欢迎广大同学们、朋友们与我们交流：

- 基于 VLC 的 MIMO-OFDM 系统;
- 多用户、多址的 VLC 网络;
- VLC、WiFi、LTE 的混合网络;
- 室内可见光定位及其应用等。

EXPERIENCE:

Associate Professor, Communications Group, Dalian Maritime University, China (2010 - Now)
2010 - 至今: 大连海事大学, 通信工程教研室, 副教授

Guest Researcher in National Institute of Standards and Technology, USA (2008 - 2009)
2008 - 2009: 美国国家标准与技术局(NIST), 客座研究员

Ph.D. in Wireless Communications, University of Southampton, UK (2004 -2008)
M.Sc. in Radio Frequency Communication Systems (Distinction), University of Southampton, UK
(2003 - 2004)
2003 - 2008: 英国南安普顿大学, 博士/硕士

B.E. and in Electronic and Information Engineering & **B.English**, Dalian University of Technology,
China (1998 - 2003)
1998 - 2003: 大连理工大学, 学士 (电子信息工程/英语 双学位)

PUBLICATION:

BOOK CHAPTER (书的章节)

1. L. Hanzo, O. Alamri, M. El-Hajjar, **N. Wu**, "[Near-Capacity Multi-Functional MIMO Systems : Sphere-Packing, Iterative Detection and Cooperation](#)", Wiley-IEEE Press, Hardcover, 738 pages, July 2009

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2. **N. Wu**, O. Alamri, S. X. Ng and L. Hanzo, "Precoded Sphere Packing Aided Bit-Interleaved Differential Space-Time Coded Modulation Using Iterative Decoding", IEEE Transactions on Vehicular Technology, March 2008, Volume 57, pp. 1311-1316.

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6. X.D. Wang, **N.Wu** and C.L. Gao "*Generalized Closed-Form SER Analysis for OSTBC-OFDM System*", China Communications, Vol.10, No.9, September 2013, pp. 155 - 164. (Corresponding author)(SCI-E)

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6. S. Sugiura, **N. Wu** and L. Hanzo, "*Improved Markov Chain MBER Detection for Steered Linear Dispersion Coded MIMO Systems*", IEEE Vehicular Technology Conference, Barcelona, Spain, April 26-29, 2009 (SCI)

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CONTACT: 联系方式

Email: wu.nan@dlnu.edu.cn