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efficient quantum light sources based on quantum dots in photonic nanostructures

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时间：9月27日（星期四）15:00—16:30
地点：北京大学物理大楼中212教室

•**摘要：** Solid-state quantum emitters, especially epitaxial quantum dots (QDs) with large optical oscillator strength, are a promising candidate for future on-chip quantum devices.

•In this talk, I will share our research on efficiently generating quantum light sources from QDs embedded in photonic nanostructures. By utilizing the unavoidable fabrication disorder as a resource instead of nuisances, we've achieved random nanolaser in Anderson localized regime[1]. Moving to spontaneous emission regime, state-of-the-art single-photon and entangled-photon sources are demonstrated by deterministically couple single QDs to the highly-engineered optical modes in a variety of photonic nanostructures[2-4].

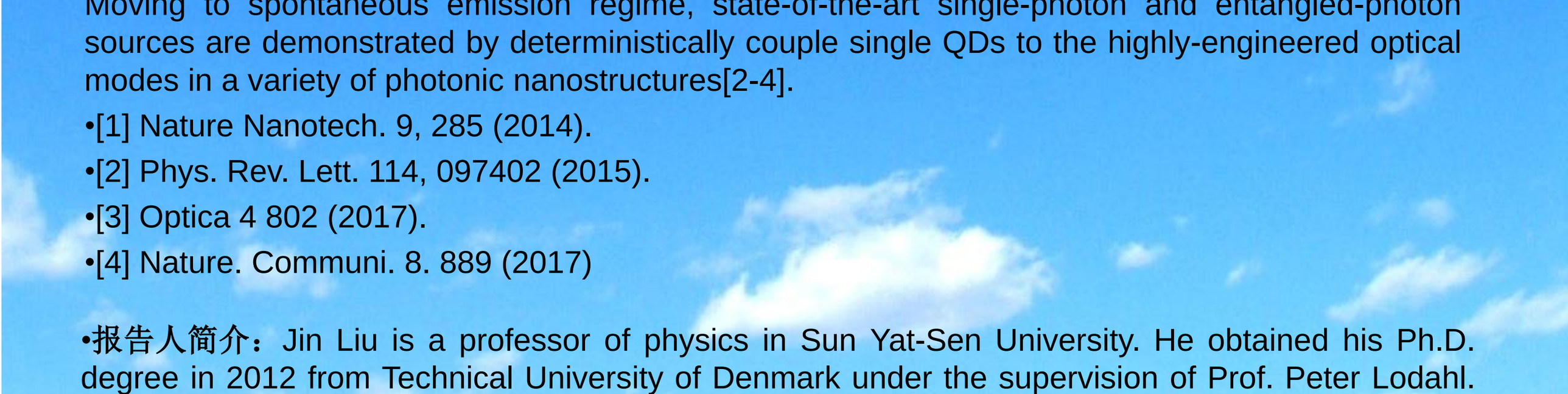
•[1] Nature Nanotech. 9, 285 (2014).

•[2] Phys. Rev. Lett. 114, 097402 (2015).

•[3] Optica 4 802 (2017).

•[4] Nature. Communi. 8. 889 (2017)

•报告人简介：Jin Liu is a professor of physics in Sun Yat-Sen University. He obtained his Ph.D. degree in 2012 from Technical University of Denmark under the supervision of Prof. Peter Lodahl. Before moving back to China, he worked with Dr. Kartik Srinivasan at National Institute of Standards and Technology (NIST) to develop integrated quantum photonic circuits. His current research activities cover integrated quantum photonics and nanophotonics by utilizing molecular beam epitaxy, semiconductor nanofabrication and cryogenic optical characterizations.



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http://www.phy.pku.edu.cn/~icmp/forun/2018/2018qiu.xml

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