

Joint CQSE & CASTS Seminar

「May 22, 2020 (Friday)」

- Time : 14:30~15:30
- Place : Rm716, New Physics Building
- Speaker: **Prof. Yi-Hsin Chen** 陳易馨
Dept. of Physics, NSYSU
國立中山大學物理學系
- Title : **Quantum manipulation in
micro- and nano-structures**

▲ Open for members of National Taiwan University

▲ Everyone have to wear sanitary masks all the time and keep gaps between each other.

**Sponsored by Center for Quantum Science and Engineering (CQSE) 量子科學與工程研究中心
and Center for Advanced Study in Theoretical Sciences (CASTS) 理論科學高等研究中心, NTU

Joint CQSE and CASTS Seminar

2020
May 22, Friday

TIME May 22, 2020, 2:30~3:30pm
TITLE Quantum manipulation in micro- and nano-structures
SPEAKER Prof. Yi-Hsin Chen
(Dept. of Physics, National Sun Yat-Sen University)
PLACE Rm716, CCMS & New Physics Building, NTU

Abstract

I will first give an overview of our previous works including the studies of electromagnetically induced transparency (EIT), Rydbergstate EIT, slow light and stored light, and quantum-state manipulation in laser-cooled atomic ensembles. Then I will present the study in miniaturized systems with thermal vapors such as optical nanofibers, photonic-crystal fibers, microcells, and waveguides, for the applications in quantum information science. Combined with Rydberg atoms, the systems are able to form multiple quantum-bits and quantum gates in these strongly nonlinear atomic medium. I will mention the method to generate single-photon source based on strongly interacting Rydberg atoms via four-wave-mixing (FWM) and photon blockade effect from a room temperature microcell.

Finally, a proposal of building an array of Rydberg atoms in a nanofiber system will be discussed.

- ▲防疫期間僅限本校人員參與 Open for members of National Taiwan University.
- ▲拒絕有發燒或呼吸道症狀者入場 Individuals with fever or respiratory symptoms are prohibited from participating in the event.
- ▲全員須全程戴口罩並與鄰座參與者保持間隔 Both faculty members and participants are required to wear sanitary masks all the time and keep gaps between each other.
- ▲場地備有酒精供雙手消毒使用 We provide alcohol sanitizer to keep your hands clean.

