

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.

