



Department of Electronic Engineering, Department of Physics and Materials Science, and IEEE LEOS (Hong Kong) Chapter Jointly Present a Seminar on

**COHERENT DARK RESONANCES:
HIGH RESOLUTION SPECTROSCOPY AND APPLICATIONS**

by

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Spectroscopic investigations of atoms and molecules, including spontaneous emission from excited atoms, being a natural focus of early quantum mechanics, became an especially active area in 70s, after developing of narrow-band tunable lasers. Today, it is again at the forefront of quantum optics research, following the recent advances in the construction of atomic traps and direct observation of emission and absorption of individual quanta from isolated atoms.

It is long known that multilevel atoms interacting with electromagnetic field can display a much broader range of effects than their two-level counterparts as a result of the coherences among the states induced by the radiation and quantum interference. Interference produced by the presence of coherences have been known since the development of quantum mechanics, and their creation has been largely exploited in spectroscopy and quantum optics. However, a macroscopic effect such as the total suppression of fluorescence emission by coherent population trapping is quite unusual.

The talk will be focused on this phenomenon and its applications.

Victor Zadkov is a Professor of Physics in the Department of Physics, M.V. Lomonosov Moscow State University. He received his M.S. and Ph.D. degrees in Physics from the same University in 1981 and 1984, respectively. Since 1991 Victor Zadkov became a Vice-Director of the International Laser Center and since 2000 — a Vice-Dean of Physics, M.V.Lomonosov Moscow State University.

Date : 1 December 2008 (Monday)
Time : 11.00 a.m.. - 12.00 noon
Venue : G6302 (Green Zone)

**** ALL ARE WELCOME ****

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