

13th Hong Kong Physical Society Annual Conference
Date: June 14, 2008

8:30	Registration (Y302/M106)			
8:50	Welcoming Speech (Y302)			
09:00 - 09:40	<i>Plenary Talk (Y302) – Yshai Avishai (Ben Gurion)</i> “Electron States on a Sphere: Effects of Magnetic Charge and Spin-Orbit Interaction”			
	<i>Condensed Matter Physics (M103)</i>	<i>General & Theoretical Physics (M104)</i>	<i>Material Science (M107)</i>	<i>Biophysics and Spectroscopy (M108)</i>
09:50 - 10:20	Invited Talk T. K. Wan (CUHK)	Invited Talk W. Zhou (CityU)	Invited Talk C. C. Ling (HKU)	Invited Talk J. A. Zapien (CityU)
10:20 - 10:35	C. He (HKUST)	C.H. Fung (HKU)	Y. C. Zhong (HKUST)	W. L. Yip (HKBU)
10:35 - 10:50	S. H. Lee (CUHK)	B. P. Jin (HKUST)	G. Y. Wang (PolyU)	M. C. Tam (HKUST)
10:50 - 11:05	H. K. Chan (HKBU)	S. Y. Mak (HKU)	H. K. Lau (PolyU)	H. L. Li (PolyU)
11:05 – 11:20	Tea Break			
11:20 - 11:35	S. C. Sung (CUHK)	K. H. Ng (HKUST)	H. F. Wong (PolyU)	Invited Talk C. S. Zhou (HKBU)
11:35 - 11:50	M. J. Zheng (CUHK)	H. M. Kwok (CUHK)	W. C. Liu (PolyU)	
11:50 - 12:05	H. K. Chan (HKBU)	H. Xie (HKUST)	S. K. Lok (HKUST)	K. Zhang (PolyU)
12:05 - 12:20	K. L. Chan (CUHK)	W. Yang (CUHK)	S. F. Zhou (PolyU)	X. Q. Gong (HKUST)
12:20 - 12:35	X. H. Lu (HKU)	W. L. Chan (CUHK)	W. K. Li (PolyU)	K. K. Cheung (HKBU)
12:45 - 13:50	Lunch and HKPS AGM (Y302)			
	<i>Condensed Matter Physics (M103)</i>	<i>General & Theoretical Physics (M104)</i>	<i>Material Science (M107)</i>	<i>Outstanding Student Presentation Award (M108)</i>
14:00 - 14:15	L. L. Leung (CUHK)	Invited Talk K. Y. Wong (HKUST)	Invited Talk F. Yan (PolyU)	H. L. Zeng (HKU)
14:15 - 14:30	G. Wang (HKUST)			X. H. Xie (HKUST)
14:30 - 14:45	C. S. Guo (CityU)	Y. Hu (HKBU)	S. H. Choy (PolyU)	Z. H. Qiao (HKU)
14:45 - 15:00	T. H. Fung (CUHK)	C. H. Yeung (HKUST)	X. Q. Shi (CityU)	K. H. Ho (HKU)
15:00- 15:15	G. X. Jia (CityU)	P. Yan (HKUST)	S. T. Lau (PolyU)	K. H. Fung (HKUST)
15:15- 15:30	J. Lu (HKUST)	X. B. Yang (CityU)	R. Ni (CUHK)	J. X. Zhang (PolyU)

PROGRAM

8:30 Registration

Plenary Session

Room: Y302 **Session Chair: K.S. Wong**

8:50 Welcoming Speech - Prof. K. H. Wong

8:55 Welcoming Speech - Prof. K. S. Wong

9:00 Plenary Talk – Prof. Yshai Avishai

“Electron states on a sphere: effects of magnetic charge and spin-orbit coupling”

Condensed Matter Physics

Room: M103 **Session Chair: R. Q. Zhang**

9:50 T. K. Wan

“High-pressure magnesium carbonate phases up to 800 GPa”

10:20 C. He

“Existence and stability of a 180° domain-wall in sandwiched one-dimensional magnetic wires”

10:35 S. H. Lee

“Pressure corrections on density functional theory based calculations in Periclase MgO”

10:50 H. K. Chan

“Theory of time-dependent space-charge limited conduction”

11:05 Tea Break

Room: M103 **Session Chair: T. K. Wan**

11:20 S. C. Sung

“First-principles study of MgSiO₃ at core-mantle boundary conditions”

11:35 M. J. Zheng

“Anomalous size dependence of inverse participation ratio of eigenfunctions in graded elastic lattices”

11:50 H. K. Chan

“Growth models of pure supercooled materials”

12:05 K. L. Chan

“Spectral representation theory of graded composite materials”

12:20 X. H. Lu

“Electron irradiation induced deep level defects in Al doped p-type 6H-SiC”

12:45 Lunch and HKPS AGM

Room: M103 **Session Chair: Y. Wang**

14:00 L. L. Leung

“Design of cloaking metamaterials using spectral representation theory”

14:15 G. Wang

“Self-assembled 1D surface structure: a template for the growth of ordered nanowires”

14:30 C. S. Guo

“Canted dihydride on Silicon Nanowire surface”

14:45 T. H. Fung

“Controlling electric fields spatially by graded metamaterials”

15:00 G. X. Jia

“Theoretical understanding of the adsorption of F4-TCNQ molecule on perfect and defective C(100)-2×1: 1H diamond surfaces”

15:15 J. Lu

“Theoretical investigation of the relationships between magnetic circular dichroism signals and Gilbert damping coefficient in magnetic films”

General and Theoretical Physics

Room: M104

Session Chair: H. F. Chau

- 9:50 W. Zhou
“Study on the East Asia winter monsoon under a global warming scenario”
- 10:20 C. H. Fung
“Quantum measurements on composite systems with independent states”
- 10:35 B. P. Jin
“A closer look at the agent-based models of markets”
- 10:50 S. Y. Mak
“X-ray observations of the starburst galaxy IC 342”
- 11:05 Tea Break

Room: M104

Session Chair: K. Y. Wong

- 11:20 K. H. Ng
“Analyses on the agent dynamics in models of competition”
- 11:35 H. M. Kwok
“Fidelity susceptibility and quantum phase transitions in the Lipkin-Meshkov-Glick model”
- 11:50 H. Xie
“Giant Hall effect of 2D electron gas with potential patterns”
- 12:05 W. Yang
“Quantum many-body theory of qubit decoherence in a finite-size spin bath”
- 12:20 W. L. Chan
“Entanglement and quantum phase transition in the ground state of one-dimensional asymmetric Hubbard model”
- 12:45 Lunch and HKPS AGM

Room: M104

Session Chair: X. R. Wang

- 14:00 K. Y. Wong
“Minimising unsatisfaction in colourful neighbourhoods”
- 14:30 Y. Hu
“A new attempt in developing unified multiscale modeling for solids: introducing multiple scales in the principles of statistical mechanics with Born-Oppenheimer-like approximations”
- 14:45 C. H. Yeung
“Glassy behavior in re-allocating resource on random networks”
- 15:00 P. Yan
“Spin transfer torque in ballistic transport”
- 15:15 X. B. Yang
“A structure hierarchy of stable boron nanostructures: planar sheet, clusters and nanotubes”

Materials Science

Room: M107

Session Chair: C. C. Ling

- 9:50 C. C. Ling
“Defects in p-type ZnO structures and ZnO Schottky contact”
- 10:20 Y. C. Zhong
“Fabrication of ZnO photonic crystal from holographic lithography generated photoresist template”
- 10:35 G. Y. Wang
“Deposition and characterization of $\text{GdBaCo}_2\text{O}_{5.5+\delta}$ thin films on SrTiO_3 (001) substrate”
- 10:50 H. K. Lau
“Resistance switching properties of epitaxial LSMO thin films”

with gold electrodes”
11:05 Tea Break

Room: M107

Session Chair: Y. W. Wong

11:20 H. F. Wong
“Electrical properties of $\text{Li}_x\text{Ni}_{1-x}\text{O}_2/\text{In:Mg}_x\text{Zn}_{1-x}\text{O}$ heteroepitaxial junction grown on TiN buffered Si”
11:35 W. C. Liu
“Hydrothermal synthesis of CoFe_2O_4 nanocrystals and their characterization”
11:50 S. K. Lok
“MBE-grown Bi_2Te_3 thin films and nanowires”
12:05 S. F. Zhou
“Spatial modification in active ion-doped material by a femtosecond laser”
12:20 W. K. Li
“Electrical properties of electrospun nanofibers of PMMA/carbon nanotube composite”
12:45 Lunch and HKPS AGM

Room: M107

Session Chair: F. Yan

14:00 F. Yan
“Sensors based on organic thin film transistors”
14:30 S. Y. Choy
“Study of BNT-based lead-free transducer for ultrasonic wirebonding application”
14:45 X. Q. Shi
“STM image simulation of C_{60} on a Cu(111) surface”
15:00 S. T. Lau
“A new matching scheme for broad-band PMN-PT single crystal phased-array transducer”
15:15 R. Ni
“Heat transfer measurement of Al_2O_3 nanofluid in turbulent convection”

Biophysics and Spectroscopy

Room: M108

Session Chair: K. W. Cheah

9:50 J. A. Zapien
“Optical properties of II-VI nanostructures”
10:20 W. L. Yip
“Resonance-enhanced laser-induced breakdown spectroscopy: fundamentals and applications”
10:35 M. C. Tam
“Surface-plasmon-enhanced photoluminescence from metal-capped Alq_3 thin films”
10:50 H. L. Li
“Tunable luminescence of field emission display phosphors based on oxide compounds of ZnWO_4 ”
11:05 Tea Break

Room: M108

Session Chair: F. G. Shin

11:20 C. S. Zhou
“Structure-function relationship in complex brain networks by multilevel modeling”
11:50 K. Zhang
“Realization of planar mixing by chaotic velocity in microfluidics”
12:05 X. Q. Gong
“Smart drug delivery from core-shell microspheres”
12:20 K. K. Cheung

12:35 “Nuclear hormone receptor - ligand interactions”
Lunch and HKPS AGM

Outstanding Student Presentation Award Competition

Room: M108

Session Chair: H. C. Ong

14:00 H. L. Zeng
“Optical properties of single-walled carbon nanotubes”

14:15 X. H. Xie
“Study on modulated electron transport in microbial fuel cell”

14:30 Z. H. Qiao
“Universal quantized spin-Hall conductance fluctuation in grapheme”

14:45 K. H. Ho
“Purifying GHZ States Using Degenerate Quantum Codes”

15:00 K. H. Fung
“Plasmonic eigenmodes of metal nanoparticle circular arrays”

15:15 J. X. Zhang
“Interfacial coupling modulated electric and magnetic properties in
Pb(Zr_{0.53}Ti_{0.47})O₃/CoFe₂O₄ Multiferroic epitaxial multilayer”

