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II

Review of Research Projects

GENERAL INTRODUCTION

The Institute of Physics was founded in Shanghai in 1928 and was reestablished in Taiwan in 1962, with Dr. Ta-You Wu as its first Director. The succeeding Directors of the Institute were: Dr. W. N. Wang (1976-1977), Dr. E. K. Lin (1977-1989), Dr. L. T. Ho (acting, 1989-1990), Dr. T. T. Tsong (1990-1999), Dr. Y. D. Yao (acting, 1999-2002), Dr. Maw-Kuen Wu (2002-2004), Dr. S. P. Li(acting, 2004-2006), and Dr. Maw-Kuen Wu(2006–present). In 1966, the Institute, together with the National Tsing-Hua University and the National Taiwan University, co-organized the Physics Research Center, under the auspices of the National Science Council, in order to promote physics research in Taiwan. In 1970, an interdisciplinary research program for atmospheric science and fluid mechanics was initiated in the Institute of Physics, and later a similar program for biophysical research in 1975. During the First Five-Year Plan (1981-1985) of the Academia Sinica, the original two-story Physics Building was replaced by a four-story building at the same site in April, 1983. The Institute's scope of research was then further expanded to include theoretical physics, covering mainly field theory and particle physics, nuclear physics, and statistical and computational physics. Since the beginning of the Second Five-Year Plan (1986-1991), the Institute has continued to grow, both in research staff and facilities. To meet the demands of rapidly growing research activities in the Institute, a new ten-story building immediately adjacent to the original building was completed in 1999. The Physics Building is named the "Ta-You Hall" to commemorate its first director, who passed away on March 4, 2000.

At present, the Institute has 42 research staffs: 2 distinguished research fellows, 22 research fellows, 7 associate research fellows, 8 assistant research fellows, 1 senior research scientist, and 2 associate research scientists. The Institute also maintains 450 temporary employees, which include visiting scholars, postdoctoral research associates, as well as research assistants and graduate students. Current research areas can be grouped into three main categories: Nanoscience, Complexity, Medium and High Energy Physics. Specific interests are in the areas of particle physics and cosmology, experimental high-energy physics, nuclear physics, condensed-matter and surface physics, statistical and computational physics, biophysics, as well as fluid mechanics and nonlinear physics. The Institute of Physics is expected to play an increasingly important role in the development of physics and technology in Taiwan.

The Institute of Physics Logo

The logo for the Institute of Physics was the winning design from a logo submission contest held by the Institute. It was an idea born on April 15, 2003 by Dr. Chia-seng Chang, an Institute Fellow, with the following spirit in mind:

The letters I.O.P are drawn with the additive primary colors blue, green, and red, and they are placed in such a way that one can depict G，ε，h，k, the 4 fundamental constants which represent classical mechanics, electromagnetism, quantum mechanics, and statistical mechanics. With further imagination, one can conceive the number 1928 from the design, which is the year the IOP was founded.

Nanoscience Research Group

Nanoscience and nanotecnology have become the major research focus in the Institute. We have already built up our capabilities and expertise during the past few years. To further enhance our research strength we have decided that all our efforts and interests will be grouping into the following categories:

(i) Development of state-of-the-art research tools for nano-science

(ii) Study on transport and thermodynamic properties in nanostructured materials

(iii) Manipulation and control of single atom and single molecules

(iv) Theoretical modeling and simulations of nano-system

The followings are the research groups that involve in nanoscience researches and summaries of their research activities:

I. Surface Physics and Nanoscale Microscopy

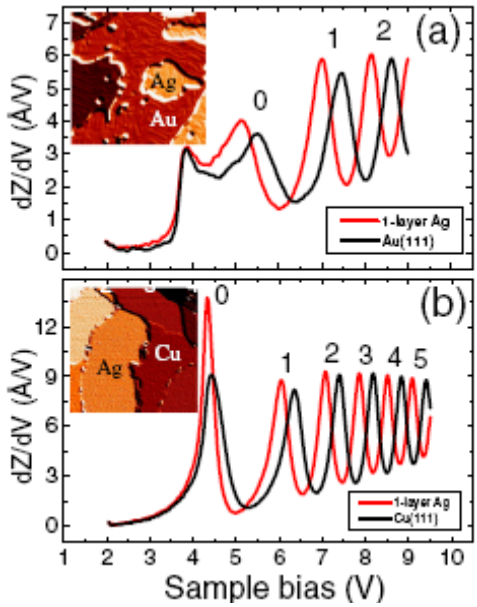
This research group includes four faculty members and two joint appointment faculty members and routinely maintains a size of around 20 researchers comprised of visiting scholars, post-doctors, assistants, and students. We have established several major research tools such as scanning tunneling microscopy (STM), atomic force microscopy (AFM), field ion microscopy (FIM), transmission electron microscopy (TEM), photoemission electron microscopy (PEEM), low energy electron diffraction (LEED), Auger spectroscopy (AES), x-ray microscopy and etc. In past years, our focus has been on studying surface dynamics, film growth mechanisms, principles of atomic manipulation, quantum phenomena associated with low dimensionality, and microscopic instrumentations. In next five years, we plan to make progress in investigating the site-specific and shape-related properties of nanoscale objects with atom-resolvable STM; analyzing the real-time correlation between the functionality of a quantum dot or quantum wire and its structure with the TEM/STM combined system; designing quantum phenomena laboratory at the atomic scale with ultra-low temperature STM equipped with superconducting magnet; improving the resolution of x-ray radiology to nanometer scale; and modeling nanomaterials with calculations and simulations. Some past research accomplishments are summarized in the following:

- We have observed that the work function of the thin film can be precisely measured with high order Gundlach oscillation in scanning tunneling spectroscopy. (Phys. Rev. Lett. **99**, (2007) 216103)
- We have detected the dynamics of 17-mer DNA-triplex dissociation mechanism at the molecular level. Fluorescence resonance energy transfer (FRET) was used as an indicator of intermolecular interaction in nanometer range, whereas AFM was employed to address single molecule with sub-angstrom precision. (Appl. Phys. Lett. **91**, (2007) 203901)

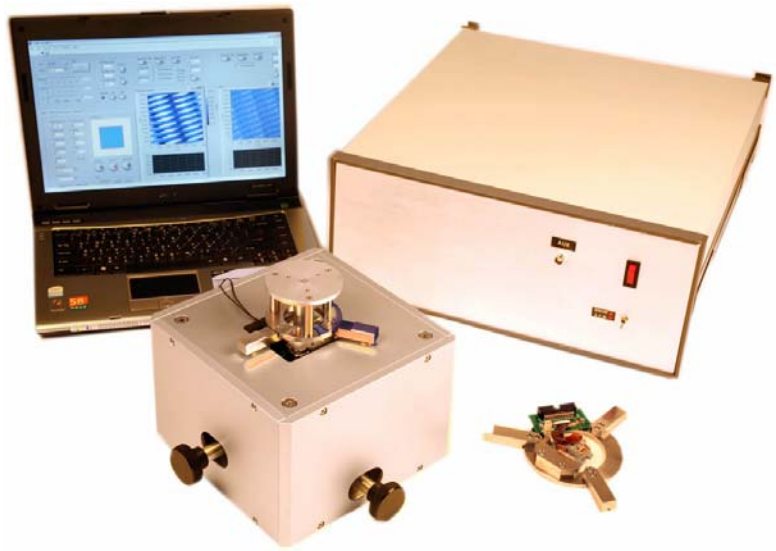
- We have we demonstrate an astigmatic detection system, constructed with a modified digital-versatile-disk (DVD) optical head, can achieve simultaneous measurement of a linear displacement and two-dimensional tilt angles with a high sensitivity. No other techniques have been demonstrated to achieve such kind of simultaneous measurement of multi-dimensional motions in real time. An atomic force microscope, using our detection system to sense the deflection of microfabriacted cantilevers, can resolve single atomic steps on graphite surfaces with the noise level less than 0.04 nm in the topographic images. This astigmatic detection system can even detect mechanical resonances due to thermal vibrations of microfabricated cantilevers. (Appl. Phys. Lett. **91**, (2007) 221908)
- We have successfully fabricated a gold Fresnel zone plates (FZPs) and yielded unprecedented resolution levels in hard-x-ray microscopy. Tests performed on a variety of specimens with 8-10 keV photons demonstrated a first-order lateral resolution below 40 nm based on the Rayleigh criterion. (Accepted by Appl. Phys. Lett.)
- We explore finding the magic numbers in two-dimensional Ag clusters grown on Pb quantum islands. Analysis of their related electronic and geometrical properties not only explains the sequence of magic numbers for the planar Ag nanoclusters but also helps to elucidate the mechanism of formation. We also demonstrate that the transition from electronic origin to a geometric one within the same system. (Phys. Rev. Lett. **97**, (2006) 165504)
- We have developed a new, simple, and easily reproducible method of preparing single-atom tips by electroplating Pd or Pt on single-crystal W(111) tips followed by thermal annealing in a vacuum. (Nano Lett. **4**, (2004) 2379)
- We have studied a reversible, temperature-driven structural surface phase transition of Pb/Si(111) nanoislands and found that the transition temperature decreased with decreasing island and domain size. (Phys. Rev. Lett. **93**, (2004) 106101)
- We have determined the structure of a type of surface magic cluster by a combination of scanning tunneling microscopy, density-functional calculations, and dynamical low energy electron diffraction. The unprecedented detailed structure information provided by the diffraction measurement is consistent with direct microscopic imaging and theoretical calculations. (Phys. Rev. Lett. **92**, (2004) 066103)
- We have investigated the structural, electronic, and optical properties of hydrogen passivated silicon nanowires along [110] and [111] directions with diameter *d* up to 4.2 nm from first principles. The size and orientation dependence of the band gap is investigated and the local-density gap is corrected with the *GW*

approximation. Quantum confinement becomes significant for d<2.2 nm, where the dielectric function exhibits strong anisotropy and new low-energy absorption peaks start to appear in the imaginary part of the dielectric function for polarization along the wire axis. (Phys. Rev. Lett. **92**, (2004) 236805)

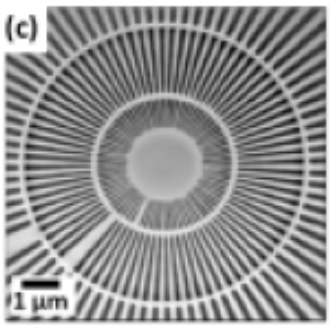
- We have used angle-resolved photoemission measurements of the electronic structure to show layer-resolved quantum well states in atomically uniform Pb films, which can be correlated with dramatic variations in thermal stability. The odd film thicknesses N = 5, 7, and 9 monolayers show sharp quantum well states. The even film thicknesses N = 6 and 8 do not, but are much more stable than the odd film thicknesses. (Phys. Rev. Lett. **93**, (2004) 026802)
- We have shown that a 'phase-contrast' technique can image blood vessels in real time and at resolutions of less than ten micrometres — a level of detail not seen before even with contrast agents. The technique used a beam of 'white' X-rays (containing a range of wavelengths), generated by a synchrotron accelerator. (Reported by Nature **427**, (2004) 800)



(a) Average dZ/dV-V spectra of the Ag and Au regions. Distinct peaks marked by numbers are Gundlach oscillations. Inset: STM image of submonolayer Ag film grown on the Au(111) surface. (b) Average dZ/dV-V spectra of the Ag and Au regions. Inset: STM image of the submonolayer Ag film grown on the Cu(111) surface.



Homemade atomic force microscope using DVD optical head as detection system



Zernike contrast image of a 180nm-thick Siemens star test pattern with 30-nm minimum separation at the center

II. Nanomaterial and low temperature physics

The nanomaterial and low temperature physics research group was established in 1989. It involves two full-time faculty members and maintains a size of around 20 researchers comprised of visiting scholars, post-doctors, assistants, and students. Our research interests include phenomena that associated with strongly correlated electron systems such as heavy fermion physics, Kondo effect and high temperature superconductivity. Other areas include the understanding of quantum-size effects on the above mentioned phenomena and others such as thermal power and thermal conductivity in alloys and/or semiconductors. We have developed our own research equipments such as a He_3 SQUID magnetometer, low-temperature microcalorimeter, and thermal power & thermal conductivity measurement systems. Magnetic susceptibility and electrical resistivity measurements can be achieved for magnetic

field up to 20 T and pressure up to 20 kbars in a dilution refrigerator. We also have setups for the preparation of nanoparticles, thin film and single crystals. Some past research accomplishments are summarized in the following:

- We have observed several interesting quantum-size effects on the magnetisim and superconductivity in nanomaterials of heavy fermion systems.
- We have developed the new methods for the production of high quality magnetic/superconducting nanoparticles and thin films
- We have developed a new wide-range low temperature sensor for calorimeter application using transition metal oxides.
- We have observed the coexistence of magnetic order and superconductivity in Ru-based double perovskite oxides.

Major research achievements：

1. *A world-class high-pressure thermal-relaxation microcalorimeter*

We have developed a high-pressure thermal-relaxation microcalorimeter. It integrates our earlier developed thermal-relaxation microcalorimeter with a pair of diamond anvils, covering the temperature range of 0.3-30 K and applied pressure up to 10 Kbar. Major difficulties requiring innovative solutions to thermally isolate the sample and diamond anvils from the environment. The system has now been tested and used for the pressure dependence of heat capacity for heavy fermion nanoparticles.

2. *Measuring system for electrical and thermal transport properties of a single nanowire*

We have devoted to the study of thermoelectric nanomaterials for many years. In order to obtain the intrinsic properties of Seebeck coefficient, electrical conductivity and thermal conductivity of a nanodevice, a measuring system has been developed and successfully applied to single nanowires prepared by anodic-aluminum-oxide template and the lithography technique. A single nanowire is suspended in vacuum with its two ends in contact with the substrate for thermal insulation. By applying the 3ω method, the intrinsic t
hermal and transport properties of the nanowire can be obtained. The results on a single Ni nanowire (Φ= 200 nm and L= 10 um) have been reported (Applied Physics Lett, 91, 251907**,** 2007).

3. *Initiating an innovative research field -- novel physical properties of heavy fermion nanoparticles*

3-1. Kondo enhancement and antiferromagnetic order suppression in nanoparticles

It is known that magnetic ordering and Kondo behavior coexist in three (Ce,Al)-based compounds, $CeAl_2$, Ce_3Al, and Ce_3Al_{11}. As the particle size is reduced to nanoscale, the specific heat anomaly associated with the magnetic ordering diminishes. Although the Kondo temperature also decreases, the entropy associated with Kondo anomaly exhibits a large increase. This results in an enhancement of the Kondo behavior as well as an increased coefficient γ of the linear term in specific heat. For example, in 8 nm-$CeAl_2$, magnetic ordering completely disappears and the Kondo temperature decreases to 0.65 K (from 5 K for bulk $CeAl_2$). Meanwhile, the extrapolated γ reaches 9000 mJ/mol Ce K^2 as the temperature approaches zero. This value falls in the highest range ever reported for heavy fermion compounds and was reported to PRL. It is worthy to mention that we started the research work and performed most of experiments in our lab, resulting in a successful publication.

3-2. Different size effect between ferromagnetic and antiferromagnetic ordering

Bulk Ce_3Al_{11} undergoes a ferromagnetic ordering at T_C=6.2 K, followed by an antiferromagnetic ordering at T_N=3.2 K. In Ce_3Al_{11} nanoparticles, the ferromagnetic transition remains at T_C=6.2 K, but no antiferromagnetic transition is visible down to 1.8 K. Meanwhile, a slightly smaller Curie constant of nanoparticles as compared to that of the bulk indicates a certain degree of demagnetization of Ce ions with size reduction(Phys. Rev. Lett. 84, 4990, 2000).

3-3. Lattice Disorder and Size-Induced Kondo Behavior in $CeAl_2$ and $CePt_{2+x}$

When the size of $CeAl_2$ and $CePt_{2+x}$ particles is reduced to the nanometer scale, antiferromagnetism is suppressed and Kondo behavior predominates, with the Kondo temperature T_K either decreasing ($CeAl_2$) or increasing ($CePt_{2+x}$) relative to the bulk. Extended x-ray absorption fine structure (EXAFS) measurements show that these nanoparticles are significantly distorted. While such distortions should strongly affect magnetic and electronic properties, we find that they cannot explain the observed changes in T_K. Other size-induced changes to the electronic structure must, therefore, play a significant role. The results were published in (Phys. Rev. Lett. 97, 097204, 2006)

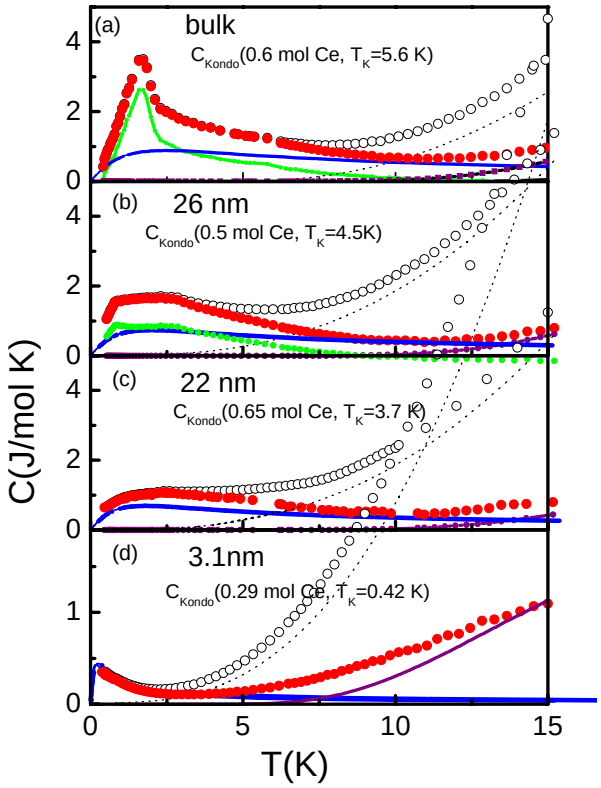
3-4. The evolution of Kondo interactions and magnetic correlation with size variation and Core (magnetic)- shell (nonmagnetic) model in $CePt_2$

The evolution of the Kondo effect and antiferromagnetic correlations with size reduction in $CePt_2$ nanoparticles (3.1-26 nm) is studied by analysis of the temperature-dependent specific heat and magnetic susceptibility. The antiferromagnetic correlations diminish with size reduction. The Kondo effect predominates at small particle size with trivalent, small Kondo temperature magnetic regions coexisting with strongly mixed valent, large T_K nonmagnetic regions.

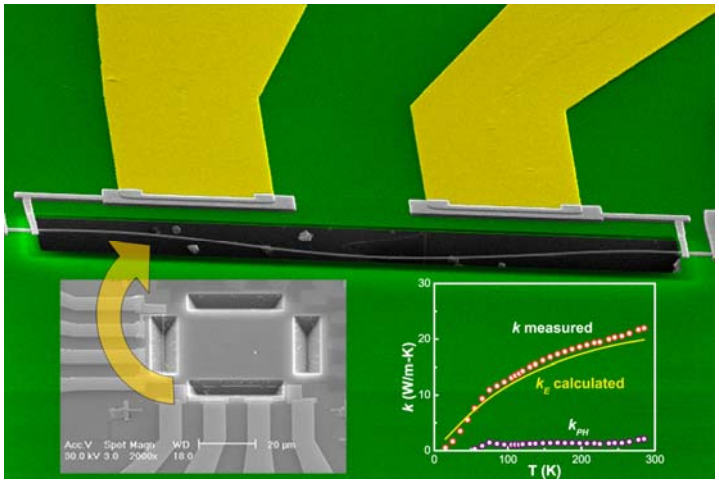
XANES measurements on $CePt_2$ show a dramatic change between the bulk and nanoparticle samples. In the $CePt_2$ nanoparticle spectra, with the first main peak near 5725 eV noticeably sharp, a new peak appears near 5735eV, which is indicative of a shift in the mean valence toward tetravalence. From the data of specific heat of bulk and nanoparticles, the integrated entropy $S_M=\int(C_M/T)dT$ is close to 100 % of Rln2 for bulk $CePt_2$, however we find n_M =0.86, 0.69 and 0.25 for d = 26, 22 and 3.1 nm, respectively. We conclude that the surface Ce ions are nonmagnetic, whereas the Ce ions in the core are still magnetic. The distribution configuration of magnetic and nonmagnetic Ce ions can be sketched by a core (magnetic)- shell (nonmagnetic) model(Phys. Rev. Lett, 98, 157206, 2007)

3-5. Observation and origin of size-dependent ferromagnetism in capped CdSe quantum dots

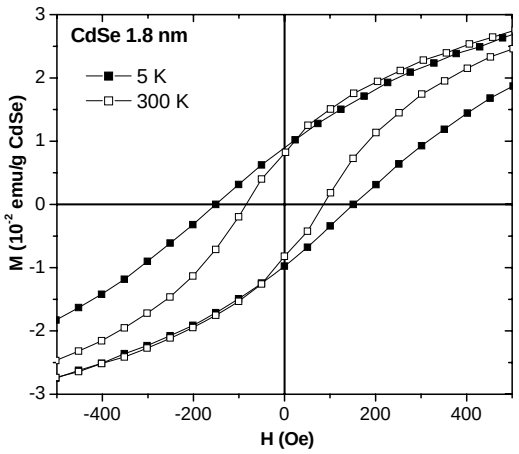
We have made observations of RTFM in CdSe quantum dots (QDs) capped with TOPO (tri-n-octylphosphine oxide) but without any doping. Meanwhile, our detailed studies of the QDs show charge transfer from surface Cd to oxygen atoms of TOPO. Accordingly, we suggest that the observed RTFM arises from holes created in the 4d band of Cd, since a calculation based on this model yields the 1/d variation of the saturation magnetization M_s in agreement with the experimental results of the variation of M_s with QD size d. Furthermore, the strength of observed ferromagnetic resonance signal decreases with increasing d. The mechanism of charge transfer from Cd to TOPO invoked in our interpretation was also supported by the data of XANES (x-ray absorption near-edge structure) and EXAFS (extended x-ray absorption fine structure) spectra (Advanced Materials).



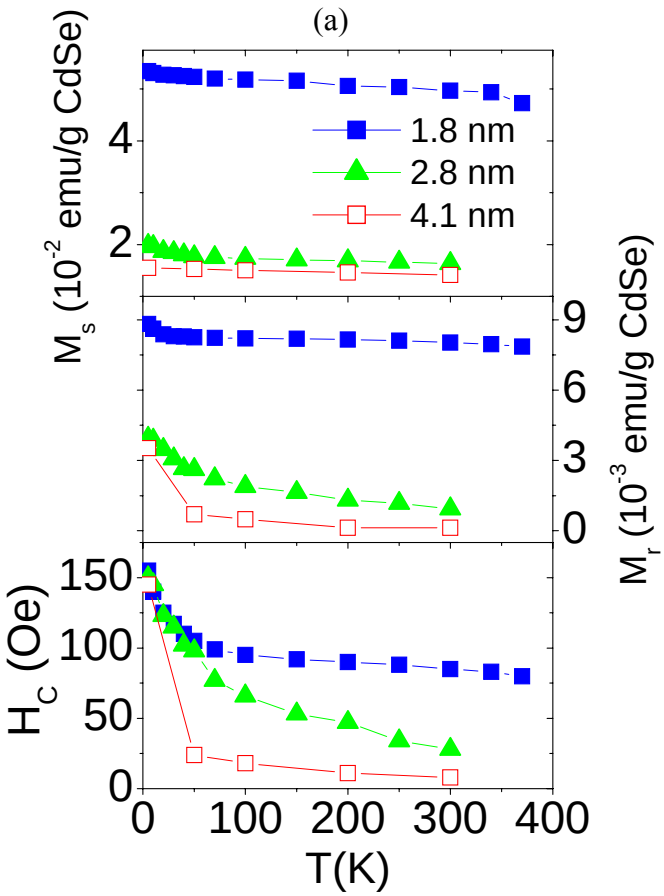
The specific heat for (a) $CePt_2$ bulk (b) 26 nm (c) 22 nm (d) 3.1 nm represented by open circles. The dashed lines represent the lattice phonon contribution C_{ph} ; the solid circles represent the specific heat C(T) - C_{ph}; the solid lines represent Kondo model fit C_K; and the dotted lines represent the crystal field contribution C_{cry}.



The scanning electron microscope (SEM) image of the Ni-NW with dimensions 100 nm×180 nm×35 μm, the Ni-NW was suspended above a groove on a Si/ Si_3N_4 substrate.



(a)



(b)

Fig. a) Hysteresis loops observed in 1.8 nm CdSe at 5 K and 300 K. The insets show the raw data (bottom right) and the data after subtracting the high-field diamagnetic component (top left). b) Temperature dependence of the saturation magnetization M_s, remanance M_r and coercivity H_c for the 1.8, 2.8 and 4.1 nm CdSe samples.

III. Spintronics, magnetic nanostructures and magnetotransport physics

Magnetic nanostructures: Two methods have been used to prepare Ge nanostructures, nanosphere lithography and inert gas condensation. First, Ge nanostructures were prepared by thermally evaporating pure Ge material to deposit different thick Ge layers (from 1 to 20 nm) on top of polystyrene nanospheres with different sizes (from 20 to 500 nm), as shown in fig. 1. The size of Ge nanostructures was influenced by both the thickness of Ge layers and the size of nanospheres. The measured magnetization was inversely dependent on the thickness of Ge layers and the size of nanospheres, as shown in fig. 2. Second, Ge nanoparticles were prepared by collecting nanoparticles from a liquid nitrogen cooled cooper plate in an inert gas atmosphere (He pressure from 0.001 to 1 Torr). Nano-sized amorphous Ge nanoparticles with sizes of about 2 – 20 nm have been prepared. By collecting Ge nanoparticles at different locations on the metal plate, the inter-particle distance was able to be varied, as shown in fig. 3. With the inter-particle distance less than the particle size, room-temperature magnetizations were measured. The magnetization was declined dramatically when the particle size or the inter-particle distance were increased, as shown in fig. 4. The distinct room-temperature ferromagnetism in Ge nanostructures was attributed to the quantum size effect and the the magnetic coupling among nanostructures. The surface effect or the dopant effect on the magnetic properties has been investigated by capping a layer on top of the Ge nanostructures. The magnetization has been enhanced by capping different materials (Si, Al, Ag, Au, Cu). These results are interesting and partial results have been published recently in Applied Physics Letters (APL 90, 182508, 2007 and APL 91, 82505, 2007) and accepted by Advanced Materials.

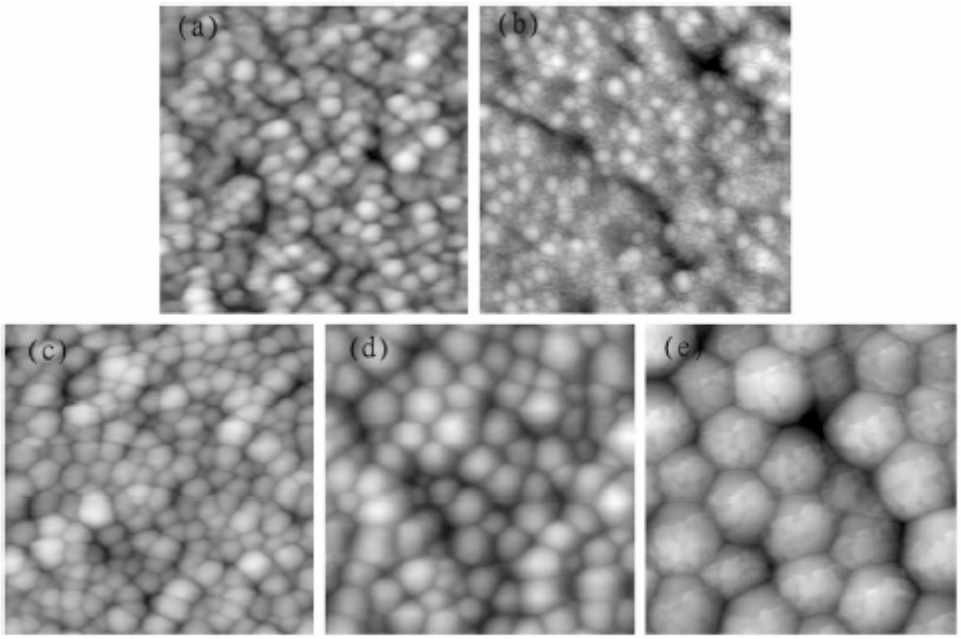


FIG. 1. AFM images of (a) nanospheres with a diameter of 20 nm without depositing Ge layer, 5 nm thick Ge layers deposited on nanospheres with diameters of (b) 20 nm, (c) 30 nm, (d) 50 nm, and (e) 100 nm. All images have the same size of 500 nm.

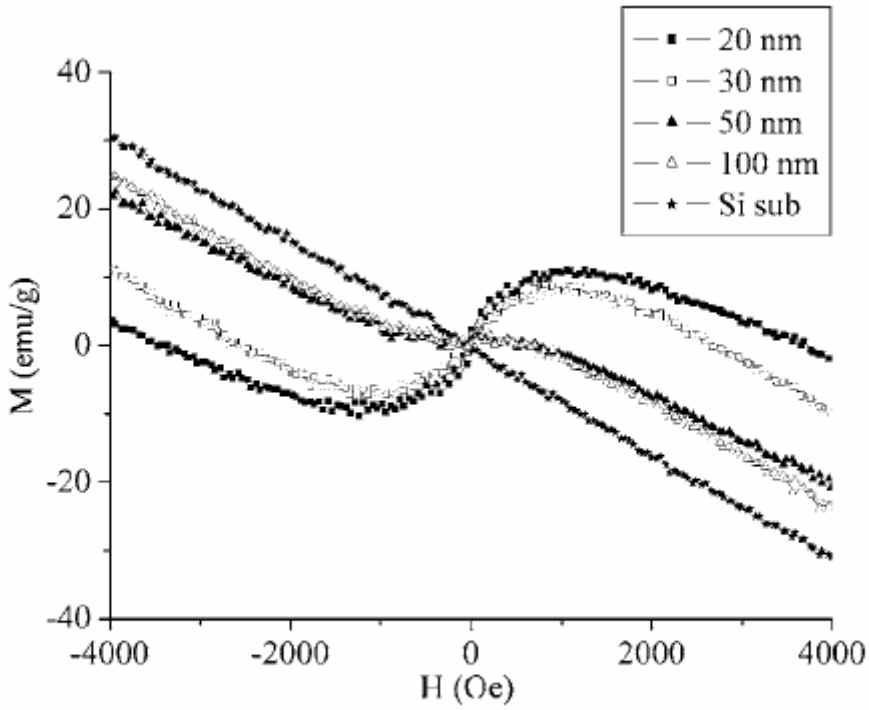


FIG. 2. *M-H* loops of 10 nm thick Ge layers grown on different nanospheres measured by VSM at room temperature.

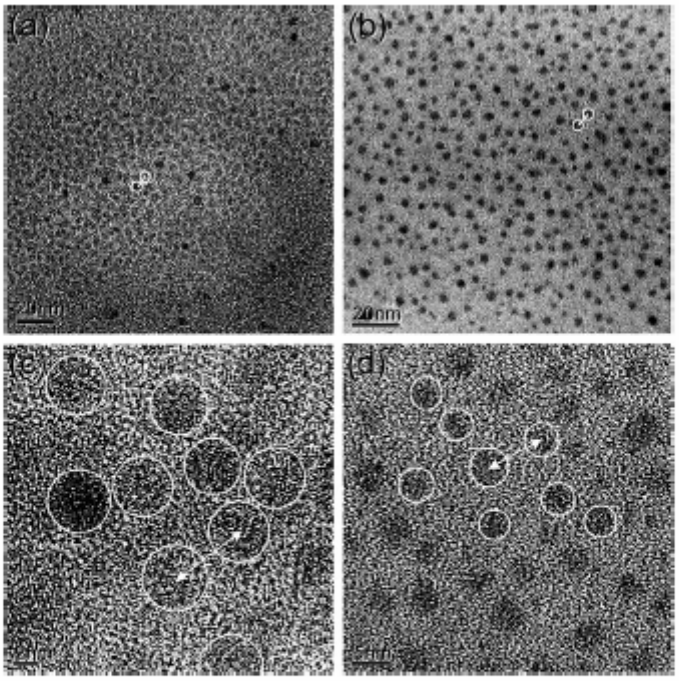


FIG. 3. TEM plane view images of Ge nanoparticles fabricated at helium pressure of 0.05 Torr on silicon substrates at distances of (a) 6 and (b) 10 cm from the center of the copperplate. The interparticle distances were increased from (c) 6 to (d) 7 nm. The circles in the images are used to define the size of Ge nanoparticles and the arrows are used to define the interparticle distance.

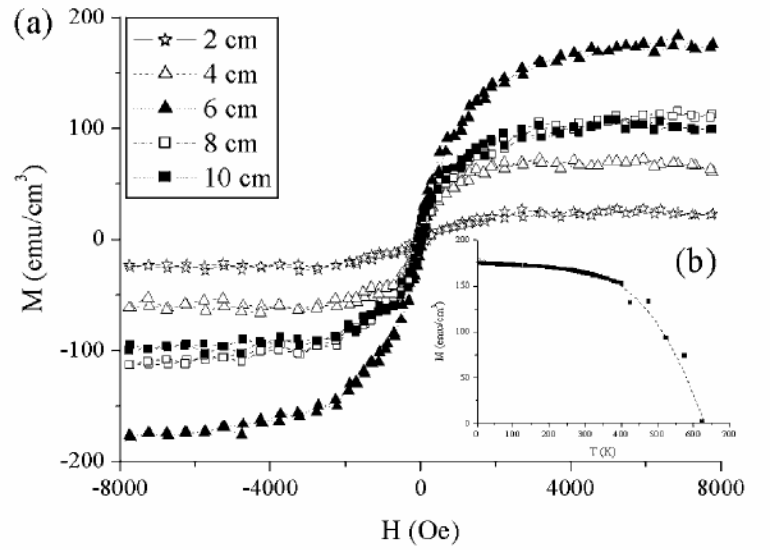


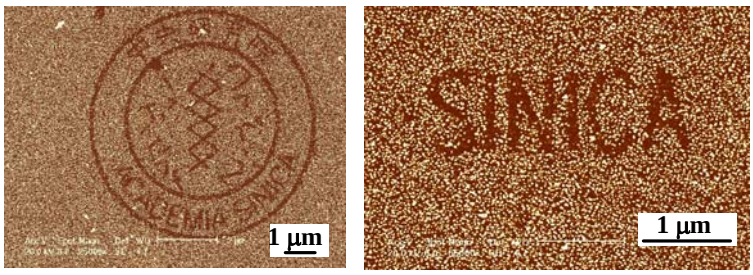
FIG. 4. (a) *M-H* loops of Ge nano-particles fabricated at helium pressure of 0.05 Torr on silicon substrates at distances of 2, 4, 6, 8, and 10 cm from the center of the copperplate. (b) The temperature dependence of the saturation magnetization of the sample at distance of 6 cm.

IV. Quantum electronics physics

Taking advantage of modern electron-beam lithography technology, we are able to fabricate various nanometer-scaled structures and electronic devices with the critical dimension well below 100 nm. Our research directions can be largely divided into two categories: to study novel (quantum) effects associate the small length scale of the devices and to investigate possible applications of the fabricated nano-devices. In the first category, we study superconductor-insulator phase-transition in arrays of Josephson junction arrays, transport in superconducting single electron transistors and in nanowires of various materials (such as silicon, carbon nanotube). In the second category, we develop new techniques for fabrication of photonic crystals, patterns of Au nanoparticles. Our recent research work mainly focuses on combined molecular engineering and advanced nano-lithographic techniques for fabrication of functional devices and detectors. Particularly, attempts have been made on manipulation and detection of individual DNA molecules. In addition, we continue to work on topics that are related to the transport properties of nano-electronics, including nanowire devices and lithographically made silicon devices. In the following, we present high lights of our recent research works.

DNA as an Electron-Beam Sensitive Reagent for Nano-Patterning
(**Advanced Materials**, *18*, 1517–1520 (**2006**))

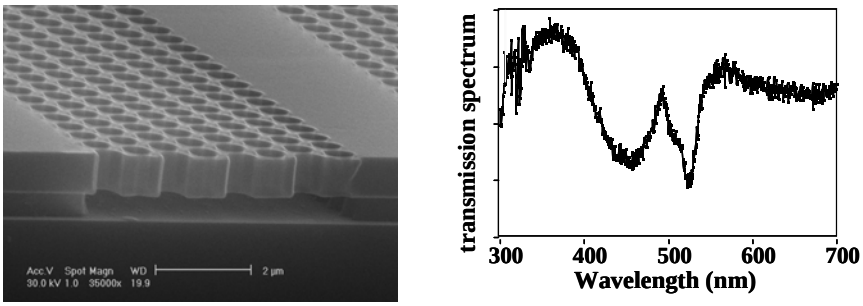
In this study, we propose and demonstrate a new application using DNA as an e-beam sensitive reagent for patterning. The technique allows direct electron-beam patterning of oligonucleotides. To this end, thiolated single-strand DNA was bombarded using a focused electron beam, resulting in the inhibition of hybridization to complementary strands. The degree of inhibition as a function of the exposure dose was studied using both fluorescence-probe and Au-nano-particle labeling. Finally, for demonstration purposes gold nano-particles were used as markers to produce nano-scaled patterns. The results of which are presented in this paper. This technique has potential applications in the fabrication of DNA-based nano-structures.



Gold nano-particle pattern produced by utilizing DNA molecular layer as an e-beam sensitive reagent. In this approach, thiolated single-strand DNA was bombarded using a focused electron beam, resulting in the inhibition of hybridization to complementary strands, and then gold nano-particles were used as markers to reveal nano-scaled patterns. This technique has potential applications in the fabrication of DNA-based nano-structures.

Polymer-based photonic crystals fabricated with single-step electron beam lithography (**Advanced Materials**, 19, 3052 (2007))

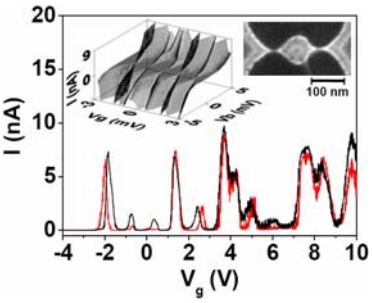
We present a simple, versatile technique for the fabrication of quasi three-dimensional suspended polymer photonic crystals (PCs) and three-dimensional multilayer polymer photonic crystals. For quasi-3D PC slabs, photonic band gap in the visible light region was evidenced from optical microscopic observation and transmission spectrum measurement. In addition, slabs with photonic band gap in both TE-like and TM-like modes for the telecommunication wavelength region were designed and fabricated. This unprecedented fabrication method utilizes only a single-step electron beam lithography process, and thus overcomes difficulties encountered by existing 3D PC techniques. This is a step forward to the realization of multifunctional PC integrated circuits.



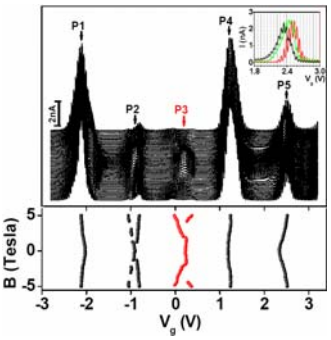
(left) SEM image of a suspended PMMA quasi-3D PC slab with a hexagonal array of air holes. The hole radius is 260nm, and the lattice constant is 800nm. (right) Measured transmission spectrum. The calculated gaps are 454~484nm and 491~508nm.

Cyclotron Localization in a sub-10nm Silicon Quantum Dot Single Electron Transistor (**Applied Physics Letters**, 90, 032106 (2007))

We have fabricated and measured a lateral Si-SET consisting of a succession of a big island and small quantum dots. In this device, small Coulomb oscillation wiggles, due to the big island, acted as a scale to reveal shifts in peaks of Coulomb oscillation envelopes, due to the small quantum dots, in the presence of a magnetic field. The observed shifts in peak position are analyzed in the context of field-induced Landau level shift in dots with a soft-wall confinement potential. Furthermore, the current peak was suppressed for fields beyond a threshold value. An explanation based on cyclotron localization at non-interacting Landau levels of the small quantum dots is presented.



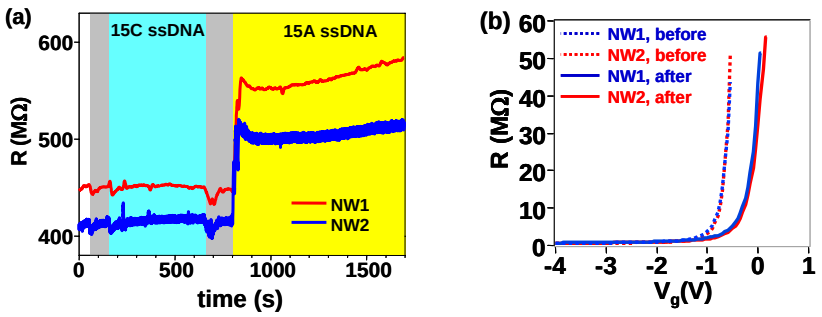
The oscillatory current modulation in gate voltage at B=0 (black curve) and B=5T (red curve) measured at 70mK for the device shown in the top-right inset. The device contains a big island connected to leads via small dots present in the nano-constrictions. The top-left inset presents IV_b curves at ramping V_g clearly marking the Coulomb blockade diamond; a closer look reveals fine wiggles arising from Coulomb oscillation in the big island.



(top) Dynamics of 5 current peaks in magnetic field at a bias voltage of 1.8 mV. The curves shift with field from -5T at the bottom to +5T at the top. The current peaks at zero magnetic field are clearly suppressed as seen from peak P3. Refer to the main text for the description of the origin of the shift and suppression of the current peak. The inset presents enlarged view of P5 describing the evolution of current peak position with the applied fields of 0 (black curve), 2.5T (green curve) and 5T (red curve). Note also the small wiggles show no shift in the field. The peak position shift in (bottom) as a function of magnetic field for the 5 peaks are extracted from the raw data shown in (top) for further analysis. Peaks 2 and 3 show clear splitting in the presence of field, and the peaks shift in opposite directions.

Control and detection of organosilane polarization on nanowire field-effect-transistors (Nano Letters, 2007)

We demonstrated control and detection of UV-induced 3-Aminopropyltriethoxysilane (APTES) polarization using silicon nanowire field-effect-transistors made by top-down lithograph technology. Electric dipole moment in APTES films induced by UV-illumination was shown to produce negative effective charges. When individual dipoles were aligned with an externally applied electric field, the collective polarization can prevail over the UV-induced charges in the wires and give rise to an abnormal resistance enhancement in *n*-type wires. Real-time detection of hybridization of 15-mer poly-T/poly-A DNA molecules was performed, and amount of hybridization induced charges in the silicon wire was estimated. Based on these results, detection sensitivity of the wire sensors was discussed.



Measured nanowire resistance in response to the injection of ssDNA molecules. Prior to the measurement the wires were modified with 15T ssDNA. (a) 15C ssDNA (cyan shade) and buffer (gray shade) solution were added at t=150 and 650 sec, respectively, and the wire showed no change in resistance. At t=800 sec, 15A ssDNA (yellow shade) was added and an abrupt increase in the resistance was observed. The two curves are for two SiNWs measured simultaneously. (b) The resistance of two p-type wires measured simultaneously as a function of gate voltage before addition of 15A ssDNA (dotted curve) and after hybridization (solid curve).

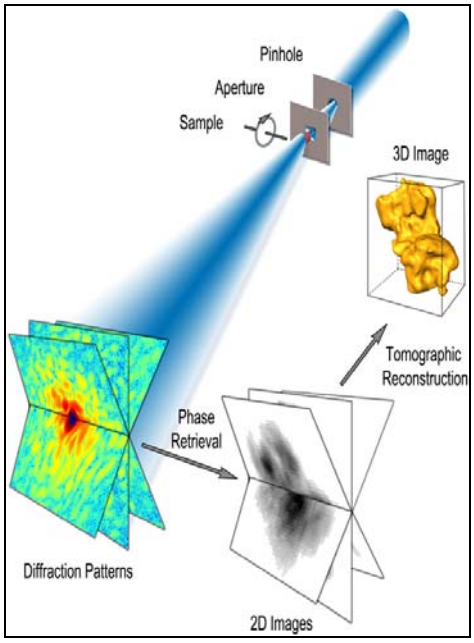
V. Theoretical condensed matter physics

This group consists of two faculty members and more than 15 postdoctors, visiting scholars and research assistants including graduate students. The major research interests are High temperature superconductivity; Nano-materials; Protein structure prediction; Protein folding; Quantum Monte Carlo method. Theory of low temperature quantum systems; quantum many-body phenomena in cold-atoms, especially spinor Bose condensates and Fermionic superfluids, bosons and fermions in optical lattices; electronic transport in mesoscopic systems; properties of unconventional superconductors.

VI. Computational physics

New Algorithm for 3D image reconstruction of non-crystalline objects by using x-ray diffraction microscopy (Phys. Rev. Lett. 97, 215503 (2006))

With the advance in nanoscience and nanotechnology, x-ray diffraction microscopy, a newly developed imaging technique, is becoming more and more important in the structural determination of non-crystalline micro- or nano-objects. The oversampling technique has been proposed to retrieve the lost phases of the measured intensities. By introducing the concept of optimization with the conventional hybrid input-output (HIO) algorithm, we developed a new algorithm with a much better accuracy in the reconstructed 2D images. We also developed a method to align all the reconstructed 2D images obtained at different angles. The method was demonstrated by carrying out a quantitative 3D imaging of a heat-treated GaN particle with each voxel corresponding to $17 \times 17 \times 17$ nm^3. We observed the platelet structure of GaN and the formation of small islands on the surface of the platelets, and successfully captured the internal GaN-Ga_2O_3 core shell structure in three dimensions.



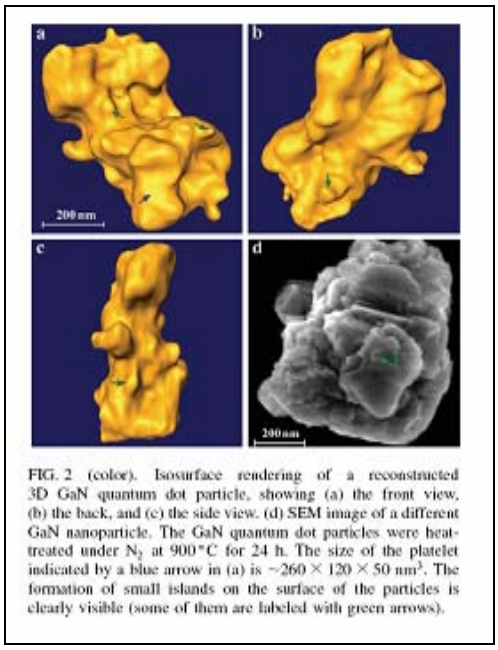


FIG. 2 (color). Isosurface rendering of a reconstructed 3D GaN quantum dot particle, showing (a) the front view, (b) the back, and (c) the side view. (d) SEM image of a different GaN nanoparticle. The GaN quantum dot particles were heat-treated under N_2 at 900 °C for 24 h. The size of the platelet indicated by a blue arrow in (a) is ~260 × 120 × 50 nm^3. The formation of small islands on the surface of the particles is clearly visible (some of them are labeled with green arrows).

Fig.1. Schematic layout of the 3D x-ray diffraction microscope, combining *ab initio* phase recovery with tomographic image reconstruction.

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Intermediate and High Energy Physics Research Group

I. Theory Programs

A. Particle Phenomenology

(1)Higher-order calculations in k_T factorization
(2)Gluonic contributions in B meson decays
(3)New physics in $B \to K\pi$ decays
(4)Strong phases from annihilation diagrams in B meson decays
(5)Final-state interactions in hadronic B decays
(6)Hadronic B decays involving p-wave mesons
(7)Out of equilibrium and RHIC physics
(8)Photon production from nonequilibrium disoriented condensates in a spherical expansion
(9)Loop gravity
(10) p-brane production in fat brane or universal extra dimension scenario
(11) Nonperturbative bound on high multiplicity cross sections in theory in three dimensions from lattice simulation
(12)Neutrino mass and neutrino oscillation
(13)Quantum bit commitment

B. Particle Astrophysics and Cosmology

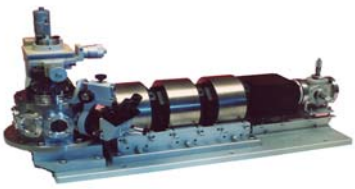
(1)Decaying superheavy dark matter and subgalactic structure of the Universe
(2)Bound on the time variation of the fine structure constant driven by quintessence
(3)Observational strategies of CMB temperature and polarization experiments
(4)Density perturbation in inflationary universe
(5)Correlated hybrid fluctuations from inflation with thermal dissipation
(6)Off-equilibrium dynamics of the primordial perturbations in the inflationary universe

C. Theoretical Nuclear Physics

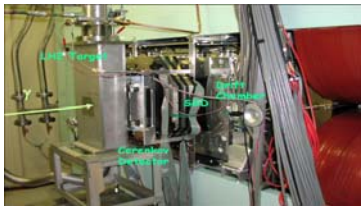
(1)Cascade production in heavy-ion collisions at SIS energies
(2)Two-level model and magnetic field effects on the hysteresis in n-GaAs
(3) Tsallis information theory

II. Nuclear Physics Experimental

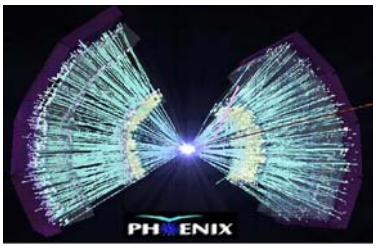
As for the high energy nuclear experiment, we participate at two international projects: SPring-8 LEPS experiment (Fig. 2) and BNL PHENIX experiment (Fig. 3). Photon beam with maximum energy up to 2.5 GeV can be generated from the backward Compton-scattering of incident eV laser photons with 8 GeV electrons circulating inside the storage rings of synchrotron facility, SPring-8 in Japan. We study the mechanism of interactions between photon and quarks at a few GeV via the reconstruction of $\gamma N \rightarrow \phi N$ reaction. In year 2003, we published the first observation of penta-quark state Θ^+ (1540) which decays into neutron and kaon. The following confirmations by other experiments have triggered tremendous effort of studying pentaquark experimentally and theoretically. In Brookhaven National Lab, U.S., RHIC collider can crate a collision of Au nuclei of center of mass energy to be 200 GeV. PHENIX experiment is capable of measuring the di-lepton and photon signal of Quark Gluon Plasma. The experimental confirmation of QGP will greatly help the understanding the effect of finite temperature and baryon density on QCD and also the story of universe creation.



The newly-installed Oxford micro-beam system.



SPring-8 LEPS experiment

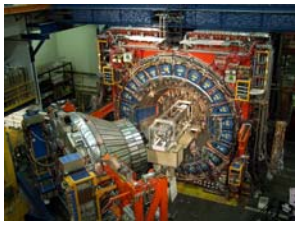


BNL PHENIX experiment

III. Particle Physics Experimental

(A) Collider Detector at Fermilab

For the next decade, Fermilab Tevatron Collider remains the highest energy frontier of particle physics. With the completion of Main Injector (which will enhance the luminosity) and with the upgrade of the collider detectors (CDF and D0), Tevatron Run II provides the potential for discovery of new phenomena and opportunities for the precision measurements in hadron collider physics. The Collider Detector at Fermilab in Run II (CDF II) is a general-purpose solenoidal detector that combines precision charge particle tracking with fast projective calorimetry and fine-grained muon detection for the study of p anti-p collisions. Precision measurement of the top mass and the W mass are primary goals of CDF II. Search for Higgs and new phenomena beyond the Standard Model will be explored

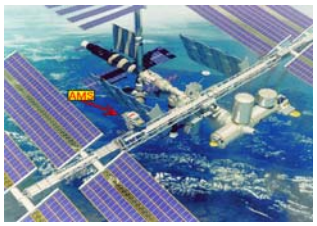


1: Insertion of the silicon track into the CDF II detector.

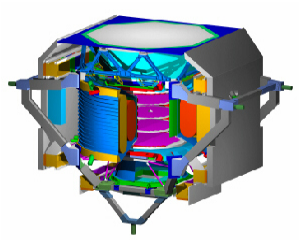
2:Silicon tracker read out Port Card mounted with the “Dense Optical Interface Modules” (black chips with optical filbers)

(B) AMS Experiment at International Space Station

The goal of the AMS experiment is to build the first precision magnetic spectrometer to be placed on the International Space Station in 2009 to search for anti-matter and dark matter in the Universe and to study cosmic ray physics and other exotic phenomenon. A simplified detector successfully operated on board the space shuttle Discovery for 10 days in June 1998, already producing important results. The AS group is leading the Taiwan participation in AMS, which includes the construction of the superconducting magnet, electronics and computing systems, as well as simulation and analysis.



1. AMS at the International Space Station



2.Schematic drawing of the AMS Detector.

(C) Neutrino and astro-particle physics

The group was started in 1997 with the goal of pursuing an experimental program in neutrino and astro-particle physics in Taiwan. The TEXONO Collaboration, at present 40-member strong, has been built up, under the leadership of the Academia Sinica group, and with the participation of several major research institutes from Mainland China. The efforts represent the first big research collaboration among scientists from Taiwan and Mainland China. The "flagship experiment" is based on scintillating crystal and solid state detectors placed near the core of Kuo-Sheng Nuclear Power Plant II at the northern coast of Taiwan to study various low-energy neutrino interactions. This is the first particle physics experiment performed in Taiwan. World-level results have been achieved in the search of neutrino magnetic moment. Our efforts and achievement have been widely covered by the international press. Various R&D projects are pursued, in further enhancing the detector techniques, in developing methods to measure trace radiopurities, in developing advanced electronic modules and in exploring the feasibilities of future experiments in areas like Dark Matter searches and the investigations of sonoluminescence.

Researchers make headway in neutrino study

By Olga Lo

After six years of painstaking work, researchers on the TEXONO project, or Taiwan Experiment on Neutrinos, have published the first results of what is admittedly a small experiment compared to what is being done at international laboratories. Nevertheless, the significance of the contribution for all the Chinese and Taiwanese scientists involved is no less evident.

Neutrinos are one of the more than 20 fundamental particles that make up the universe. Scientists around the world have conducted numerous experiments to learn more about this particle, which remains one of the least understood. Neutrinos are produced in the Earth's atmosphere, the sun, particle accelerators and nuclear power reactors.

Physicists believe that neutrino studies will help shed light on questions about the particle's mass and what role that plays in

The Kuo-Sheng Nuclear Power Station, which produces electricity used by millions of households in northern Taiwan, also houses the research facilities of the TEXONO project.

Wong said. The results of international collaborations such as the Super-Kamiokande in Japan and Sudbury Neutrino Observatory in Canada gave the Taiwan project what Wong described as a "positive impact."

This is because these earlier experiments have confirmed that the neutrino does have mass and that neutrino oscillation does take place. The latter refers to a phenomenon where neutrinos change from one type to another while traveling great distances. Such oscillation would not occur if neutrinos were entirely without mass, which scientists used to believe to be the case.

"These experiments use much larger instruments to explore different aspects of the neutrino properties from those pursued by the TEXONO experiment. However, given their findings, we know there is a grander picture behind and which direction to go," Wong noted.

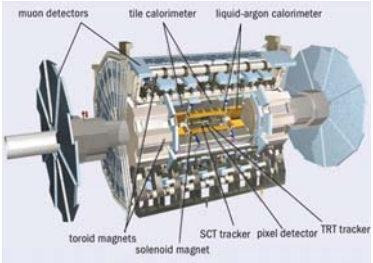
1. Headlines in Taiwan Journal, with the Kuo-Sheng Nuclear Power Plant.

2. TEXONO Collaboration Members.

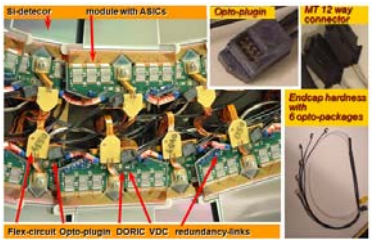
3. The shielding and control room at the Kuo Sheng Neutrino Laboratory.

(D) LHC-ATLAS at CERN

The European Laboratory of Particle Physics (CERN) is constructing the Large Hadron Collider (LHC) scheduled for commissioning in 2008. It will provide experimental usage of proton-proton collisions at center of mass energy of 14 TeV. The ATLAS detector is contructed for high energy experiment at LHC. The Academia Sinica high energy group joined the ATLAS Collaboration in September 1999. Our responsibility includes the development and construction of compact opto-packages for the optical links of the Inner Detector (PIXEL and Semi Conductor Tracker (SCT)), and the high-speed (1.6GHz) optical transmitter and receiver modules for Liquid Argon Calorimeter (LAr). A miniature opto-package (1.6mm in height) which consists of two VCSEL's (Vertical Cavity Surface Emitting Laser) and one epitaxial Silicon PIN diode has been developed for SCT to readout the 6 million channel silicon micro-strip detector. The other responsibility for inner detectors is to provide the 12-channel VCSEL and PIN array modules for use in the readout driver (ROD) of both SCT and PIXEL.



1. Schematic drawing of the ATLAS detector.



2. Opto-packages mounted on the Semi-Conductor Tracker detector modules.

IV. Grid Computing

The WLCG (Worldwide LHC Computing Grid) infrastructure is being established to store, manage and analyse the unprecedented amounts of data – tens of millions of Gigabytes per year - that will be produced by the experiments of the Large Hadron Collider, the world's biggest particle physics accelerator at CERN. By 2008, WLCG will integrate the equivalent of over one hundred thousand of today's PCs from over 200 institutes (in over 40 countries) into a computing and data grid system. In 2005, ASGC (Academia Sinica Grid Computing), led by Dr. Simon C. Lin, has formally become one of the 11 Tier-1 centers (the only Tier-1 in Asia) providing services, coordination and support for WLCG. ASGC has proven to be one of the most reliable Tier-1 Centers worldwide.

ASGC participates the WLCG technology development, including (1) GSTAT which is a Grid information monitoring system now widely used by over 200 WLCG institutes, (2) gLite middleware certification and testing, and (3) distributed analysis tools for LHC. In addition, ASGC also leads in the development of important Grid technologies such as Grid Application Platform (GAP) and the interoperability of two major Grid storage systems: SRM and SRB.

Based on the experiences of WLCG, ASGC joins the European Union e-Science flagship project (Enabling Grid for E-sciencE, EGEE) providing grid services to scientists from various domains. As the Asia Federation Coordinator, ASGC is helping 9 Asian countries to participate the EGEE activities, especially, the application area. In April 2006, a collaboration of ASGC, AS Genomics Research Center and European laboratories has analysed 300,000 possible drug candidates against the Avian Flu Virus H5N1 by using the WLCG infrastructures. Over 2000 computers were used during 4 weeks, this is equivalent to 137 years on a single computer. This is the biggest cross-continental public collaboration project ever in Drug Discovery, the story was widely reported by the international media such as BBC.

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Complexity Research Group

Complex systems are systems consisting of many simple elements which interact with each other nonlinearly. In general, the most interesting aspect of complex systems is the cooperative behavior among the elements mediated by their nonlinear interaction. Such cooperative behavior is manifested in the spatial and/or temporal patterns, which give the systems a variety of structures. In our institute, there are ten faculty members and over ten postdocs and several graduate students working in different areas of complexity and non-linear science. Our studies of nonlinear and complex systems consist of the following directions.

I. Hydrodynamics and Atmospheric Physics

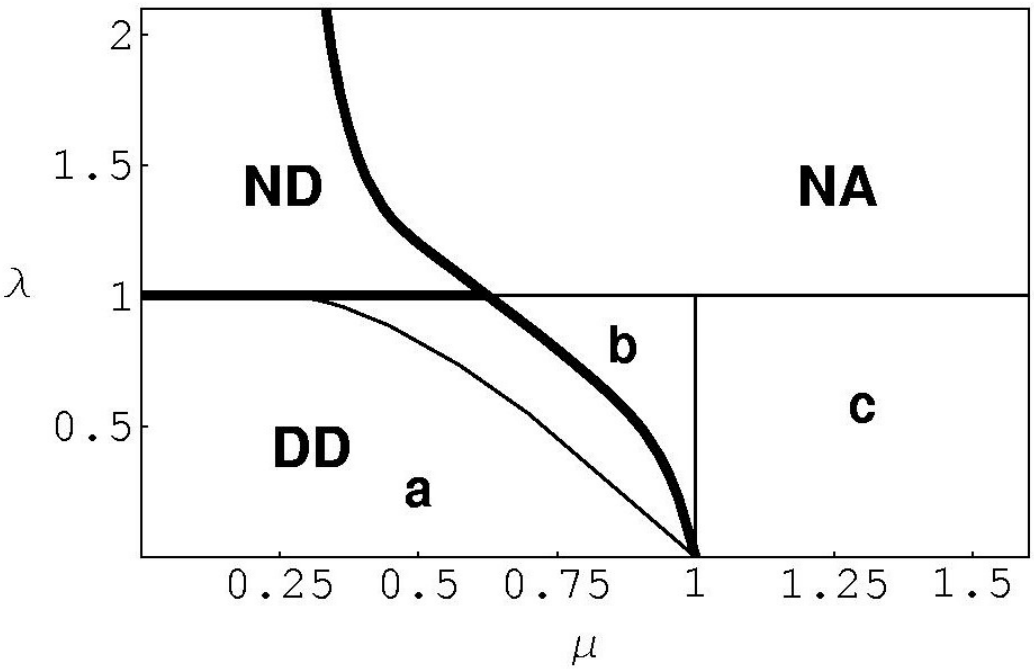
Measurement of strong wind characteristics had been carried out at the coastal area of Taiwan. Semi-Lagrangian cloud model, a nonlinear atmospheric fluid dynamic model with phase changes, has been developed for better understanding of meso-scale weather phenomena and numerical experiments of this model has been made using ensemble prediction technique to investigate the storm characteristics, such as the life cycle of the storm, precipitation area and amount of cumulated rainfall. (Bao-Shi Shau, Chung-Yi Tseng)

II. Non-linear Phenomena in Complex Systems

Complex fluids, such as polymer and surfactant solutions, electrorheological fluids, and granular fluids, are among the most important materials studied in basic and applied sciences. We investigated phase transitions of binary liquid mixture with polymer and discovered a possibly new universality class at the critical point. In two-dimensional hopper flow experiments, we are searching for a basic understanding of the jamming phenomenon. On vertically vibrating platforms, we are studying the phase transitions of granular gas as well as the conformations of granular chains. (Kiwing To). Rheology data of protein and DNA solution may reveal the molecular structures as well as the formation mechanism of these biologically important macromolecules and single-molecule measurements have just been started (Chi-Keung Chan). Other nonlinear phenomena we studied include spiral wave dynamics in chemical reaction (Chi-Keung Chan); pattern formation in fracture phenomena(Kwan-tai Leung).

III. Statistical and Computational Physics Approach to Complex Systems

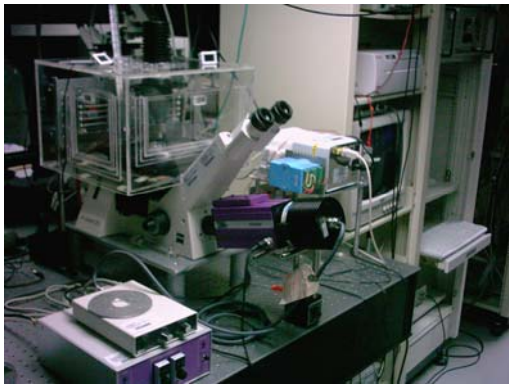
Laboratory of Statistical and Computational Physics (LSCP, website: http://www.sinica.edu.tw/~statphys/) at our institute is devoted to frontier research in statistical and computational physics (SCP), applications of SCP to problems in physical, biological, and social sciences, sponsoring meetings in SCP, and promoting education and research of SCP in developing countries. The research topics at LSCP include: equilibrium critical systems, such as the Ising, dimer, and percolation models; non-equilibrium critical systems, such as sand-pile and avalanche models; synchronization in nonlinear coupled systems and analysis of physiological data; models of biological evolution; analytic and numerical studies of macromolecules, polymer, DNA, RNA, and proteins; stochastic dynamic model for stock-stock correlations; universality and scaling in statistical data of literary works. (Chin-Kun Hu, Simon C. Lin)



Schematic phase diagram for the interstrand coupling λ versus the strand-surface coupling μ for DNA on plane surface. The bold lines confine three thermodynamical phase. **ND**: Naturation and desorption. **NA**: Naturation and adsorption. DD: Desorption and denaturation. [A.E. Allahverdyan, Z. S. Gevorkian, C.-K. Hu & T. M. Nieuwenhuizen PRL 96, 098302(2006)]

IV. Biology-Inspired Physics

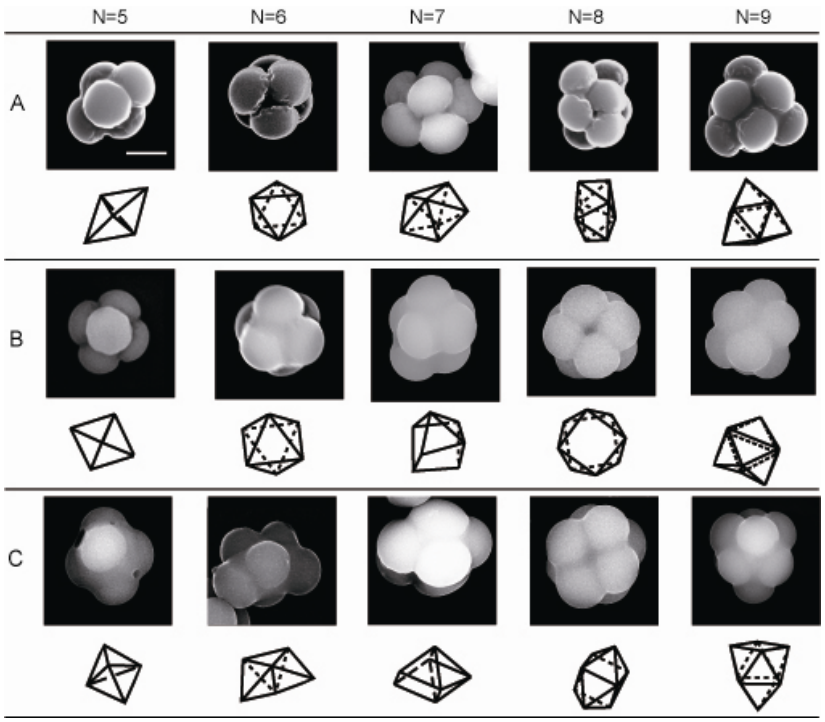
Biological organisms are likely the most complex and the least understood systems that one can imagine, due to their intricate biochemical and physical interactions among macromolecules. Biology is essentially an experimental science with huge amount of data, physicists hope to distill basic principles from them. Because all biological processes operate in a thermal environment, statistical physics is an indispensable tool in studying them. Equipped with such tools, we have been studying theoretically: biological and physiological signals (such as heart beat), development of algorithms and simulations of macromolecules (DNA, RNA and proteins) with parallel computers (Chin-Kun Hu), and collective behavior in animal flocking and bacteria (Kwan-tai Leung). Moreover, Experimental studies on synchronized firing of neural net has also been carried out (Chi-Keung Chan).



Experimental setup for synchronous firing of neural net.

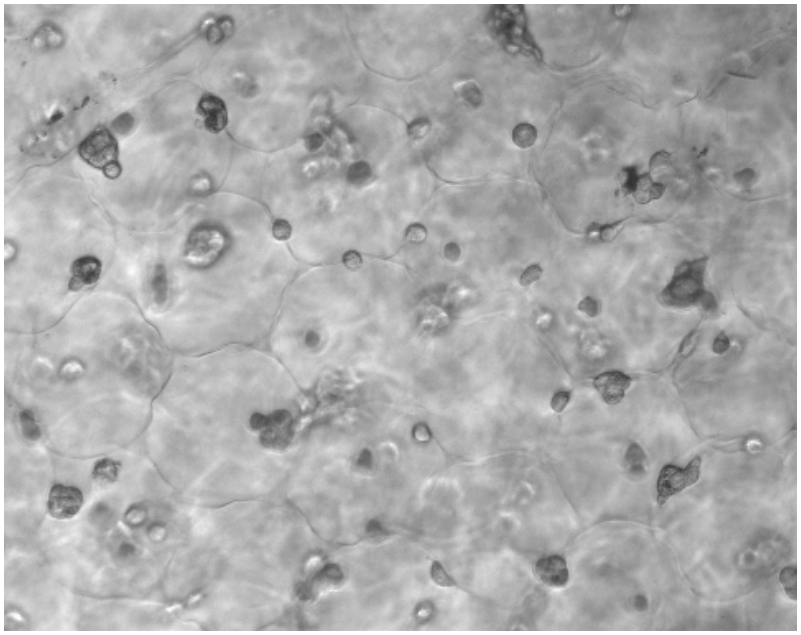
V. Self-assembly Phenomena in Colloidal Particles

I am interested in the self-assembly phenomena, particularly in colloidal systems. In nature we observe many ordered structure which happens on its own. It is important to understand self-assembly and to explore it since this is the key to the bottom-up approach of nanotechnology. We choose colloidal particles because they are ideal model systems. In many ways it is the analogy of atomic systems but their interaction can be measured directly and they can be observed in real time and real space(Keng-hui Lin).



靠將膠體小球與高分子包在油滴中製造出的膠體分子.

Colloidal clusters made by encapsulating microspheres and polymers in emulsion droplets and evaporating oil from the droplets. The clusters are categorized into three classes -- configurations that satisfy the minimal second moment, and the solutions to the spherical packings and none of the above.



由微流體製造三維有序的孔洞結構, 做爲組織工程的鷹架.

The 3D ordered macroporous foam are created by microfluidic device and used for tissue engineering scaffold.

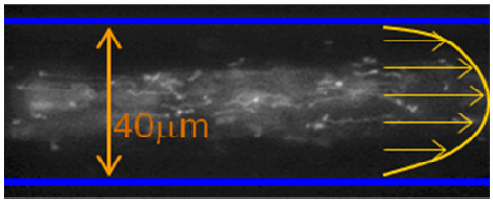
VI. Single-molecule Studies of Biological Macromolecules

Research of biological macromolecules provides golden opportunities to bridge our understandings of polymer physics to many biophysics topics. Through fluorescence microscopy techniques, the dynamics of the biopolymers in solution at the single molecular level can be clearly observed. In addition to the study of physics of various polymeric solutions, the end-grafted DNA brushes have also been constructed and studied at both mesoscopic and single molecule levels (Wen-Tau Juan).

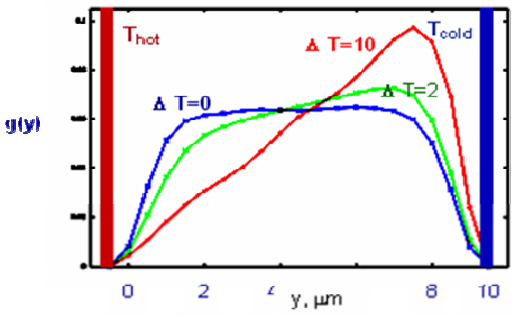
VII. Dynamics of Biological Macromolecules and Complex Fluids

The dynamics and conformation of large polymers such as DNA in highly confined systems are of interest to microfluidic applications, nano-material design, and biophysical processes in micron-scale cellular environments. Theoretical and computer modeling have allowed us to investigate the dynamics of large, micron-sized, DNA molecules undergoing flow in microchannels. Our investigation into temperature and charged ion effects on DNA dynamics could reveal new methods for DNA manipulation in small systems (Yeng-Long Chen).

(a)



(b)



DNA molecules under (a) flow induced hydrodynamic migration and (b) thermal migration allows DNA separation and manipulation in micro-and nano-devices.

Principal Investigators

Chi-Keung Chan
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Interests: nonlinear phenomenon in the dynamic behaviors of complex fluid systems, phase separation dynamics of simple fluids, polymer solutions and surfactant solutions, granular flows, Light scattering & imaging techniques,firing in neural net.

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Assistant Research Fellow
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Ph. D., Department of Chemical Engineering, University of Illinois at Urbana-Champaign
Interests: polymer physics, fluid dynamics, equilibrium and non-equilibrium statistical mechanics, entropy-driven phase separation, collective phenomena of self-driven particles.

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Research Fellow
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Kiwing To
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Ph.D. in Meteorology, University of Oklahoma, U. S. A. ;
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Tian-Yow Tsong
Distinguished Professor
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Ph.D., Yale University, USA
Research Interest：Biophysics, Mechanisms of protein folding, Electrical properties of cell membrane, Ion pumps and theory of Brownian motors, Catalytic wheel and biological energy transduction.

Postdoctoral Research Associates

Shura Hayryan； Wen-Jong Ma； Yong-Zhong Chen； Yao-Chen Hung； Karen Petrosyan； Yu-Pin Luo； Wei Chen ; Kuo-Yuan Chung ; Yuk-Gyn Lau ; Li-Lin Wang。

III

List of Ongoing Research Projects

List of Ongoing Research Projects

中央研究院物理研究所九十五-九十六年度計劃清單一覽表

(2006 年 8 月 ~ 2008 年 7 月)

主持人	計　劃　名　稱	執行期間	計劃編號
陳志強	單分子DNA流力特性之實驗研究(3/3)	95/08/01-96/10/31	NSC95-2112-M-001-003
胡進錕	臨界現象與生物聚合物研究-非線性與相變模型研究(3/3)	95/08/01-96/11/30	NSC95-2112-M-001-008
李世炳	血液循環系統效率指標之研究—以數值模擬研究血液循環系統效率指標(2/3)	95/08/01-96/07/31	NSC95-2112-M-001-010
梁鈞泰	生物體結隊行為之動力研究(2/2)	95/08/01-96/07/31	NSC95-2112-M-001-011
鄭海揚	重味物理現象學之研究(2/3)	95/08/01-96/10/31	NSC95-2112-M-001-013
陳志強	台俄雙邊合作計畫--心肌和神經學科中可激發和振盪系統之同步和控制之研究(2/3)	95/08/01-96/10/31	NSC95-2112-M-001-016
林耿慧	微流體元件裡的熱泳現象(2/3)	95/08/01-96/10/31	NSC95-2112-M-001-018
杜其永	顆粒鍊實驗研究	95/08/01-98/07/31	NSC95-2112-M-001-030-MY3
曾詣涵	特異核之研究	95/08/01-98/07/31	NSC95-2112-M-001-032-MY3
余岳仲	荷電粒子在單元素與化合物薄膜的能量損失機制之研究	95/08/01-97/07/31	NSC95-2112-M-001-034-MY2
章文箴	在日本SPring-8研究非微擾光致向量介子產生及尋找五夸克粒子	95/08/01-98/07/31	NSC95-2112-M-001-046-MY3
李湘楠	超級B工廠的物理	95/08/01-98/07/31	NSC95-2112-M-001-050-MY3
陳彥龍	極小侷域內高分子流體動力學和相變之理論研究	95/08/01-98/07/31	NSC95-2112-M-001-051-MY3

主持人	計　劃　名　稱	執行期間	計劃編號
吳建宏	暴脹宇宙的能量密度起伏	95/08/01-98/07/31	NSC95-2112-M-001-052-MY3
李定國	以數值方法研究強關聯電子系統	95/08/01-98/07/31	NSC95-2112-M-001-061-MY3
阮文滔	溶液中高分子之單分子研究	95/08/01-98/07/31	NSC95-2112-M-001-069-MY3
李尚凡	由電子傳輸性質在球型碰撞與擴散領域決定鐵磁性材料的極化率與擴散長度(3/3)	95/08/01-96/10/31	NSC95-2112-M-001-006
黃英碩	單原子探針的物理特性研究及應用(3/3)	95/08/01-96/12/31	NSC95-2112-M-001-009
任盛源	軟磁薄膜之彈性性質研究(2/3)	95/08/01-96/07/31	NSC95-2112-M-001-015
葉崇傑	低溫原子中之多體問題	95/08/01-98/07/31	NSC95-2112-M-001-054-MY3
蘇維彬	掃描穿隧能譜術於電子散射之研究	95/08/01-97/07/31	NSC95-2112-M-001-055-MY2
鄭弘泰	過渡金屬氧化物及奈米系統實驗現象之第一原理計算研究	95/08/01-96/12/31	NSC95-2112-M-001-057
姚永德	磁性結構之磁矩反轉及自旋電子傳輸現象研究	95/08/01-98/07/31	NSC95-2112-M-001-059-MY3
胡宇光	利用相對比X光顯微術研究奈米微粒和生物系統之相互作用及其影響	95/08/01-96/07/31	NSC95-2112-M-001-060
陳啟東	能量耗散對庫柏電子對相干傳輸的影響	95/08/01-98/07/31	NSC95-2112-M-001-062-MY3
劉　鏞	稀釋磁性半導體薄膜與奈米結構的研究	95/08/01-97/07/31	NSC95-2112-M-001-063-MY2
王子敬	台灣微中子實驗-低能區微中子物理的研究及從聲致發光引出高能輻射與其他奇異現象的研究	95/08/01-96/10/31	NSC95-2119-M-001-028

主持人	計　劃　名　稱	執行期間	計劃編號
李世昌	參與ATLAS實驗搜尋新物理現象暨以精密質譜儀探測宇宙中之反物質及暗物質(Ⅳ)	95/08/01-96/07/31	NSC95-2119-M-001-048
胡宇光	利用高相干性光源非破壞性分析及成像奈米及生物結構(3/3)	95/08/01-96/12/31	NSC95-2120-M-001-001
陳洋元	奈米材料之新穎物理性質與量子尺寸效應研究(2/3)	95/08/01-96/07/31	NSC95-2120-M-001-004
張嘉升	吸附、雜質、及襯底對單一奈米結構的原子重組及物性的影響(1/3)	95/08/01-96/12/31	NSC95-2120-M-001-007
陳啟東	以奈米線場效電晶體及光學感測器探討神經網路功能—電子束微影技術製備奈米線場效電晶體(子計畫二)(2/3)	95/08/01-96/10/31	NSC95-2627-M-001-006
侯書雲	強子對撞實驗物理：CDF實驗與ATLAS實驗之新物理現象及新粒子搜尋—總計畫-強子對撞實驗物理：CDF實驗與ATLAS實驗之新物理現象及新粒子搜尋	95/08/01-96/10/31	NSC95-2739-M-001-025
鄧炳坤	強子對撞實驗物理：CDF實驗與新粒子搜尋—子計畫一-CDF實驗矽偵測器維運暨ATLAS實驗計算網格建構	95/08/01-96/10/31	NSC95-2739-M-001-026
林誠謙	WLCG亞洲維運中心與Taiwan Analsis Facility之建置與維運	95/08/01-96/10/31	NSC95-2112-M-001-070
李尚凡	台灣國際奈米週研討會暨展覽	95/07/01-95/12/31	NSC95-2120-M-001-009
黃榮鑑	孤立波通過隆起底床引致碎波流場之三維數值研究(2/3)	95/08/01-96/10/31	NSC95-2221-E-001-042
陳彥竹	在CDF實驗中對新物理的探求	95/08/01-98/07/31	NSC95-2112-M-001-067-MY3
吳茂昆	新穎過渡金屬硫屬化合物之物性研究與應用-子計畫一:離子導電度對新穎過渡金屬氧化物金屬—絕緣體轉變之影響(3/3)	95/08/01-96/10/31	NSC95-2745-M-001-010
張嘉升	中央研究院奈米科技核心設施服務計畫(1/3)	95/08/01-97/06/30	NSC95-2120-M-001-008

主持人	計　劃　名　稱	執行期間	計劃編號
李世炳	科普活動計畫(C類)—踏向科學的第一步	95/08/01-97/07/31	NSC95-2515-S-001-002-MY2
張嘉升	赴澳洲雪梨ANSTO考察(國外差旅費)	95/08/20-95/11/30	NSC95-2119-M-001-061
胡宇光	分子及奈米生醫影像創新開放核心設施之建構	95/09/01-97/04/30	NSC95-3114-P-001-004-Y02
胡宇光	分子及奈米生醫影像核心設施之建構	95/08/01-97/04/30	NSC95-2120-M-001-010
吳茂昆	2007科學季「台灣科技史」特展規劃計畫	95/11/01-97/10/31	NSC95-2515-S-001-004
林誠謙	數位典藏網路核心平台計畫--子計畫三：數位典藏異地備份與長期保存系統建置計畫	95/12/01-97/03/31	NSC95-2422-H-001-029
林誠謙	刀鋒式伺服器在尖端科學計算領域的研發—科學計算基礎架構建置及調校準則研發並發展計算材料的環境	95/08/01-96/10/31	NSC95-2745-P-001-004
林誠謙	刀鋒式伺服器在尖端科學計算領域的研發(子計畫)	95/08/01-96/10/31	廣達電腦股份有限公司
李定國	刀鋒式伺服器在尖端科學計算領域的研發(總計畫)	95/08/01-96/10/31	廣達電腦股份有限公司
黃英碩	奈米級像散式量測系統之開發	95/12/01-98/11/30	NSC95-3114-P-001-008-MY3
吳茂昆	奈米國家型科技計畫辦公室運作計畫	95/12/01-97/03/31	NSC95-3113-P-001-003-Y
于　淳	用非侷限自旋閥結構來測量磁壁在次微米與奈米線寬中被脈衝磁場與脈衝電流驅動時的移動率	96/01/01-97/12/31	NSC96-2112-M-001-010-MY2
張嘉升	物理學門(凝態組)研究發展及推動計畫	96/01/01-96/12/31	NSC96-2114-M-001-001
郭鴻曦	以電化學掃描穿隧顯微術研究單一分子在水溶液中之動態行為	96/02/01-98/07/31	NSC96-2112-M-001-012-MY2

主持人	計　劃　名　稱	執行期間	計劃編號
李世昌	建造AMS太空磁譜儀以搜尋反物質及暗物質(3/3)	96/05/01-97/04/30	NSC96-2745-E-001-001
吳茂昆	國際學術網路連線、維運與全球e-Science研究應用	96/01/01-98/12/31	NSC96-2911-M-001-001-MY3
李尚凡	磁性奈米結構的點接觸量測(2/3)	96/02/01-97/09/15	NSC96-2112-M-001-008
李定國	前瞻人才培育暨科普推廣計畫	96/04/01-97/03/31	NSC96-2745-M-001-001
周家復	以微奈米流體元件製備之粒子捕捉阱，探討電場對聚集生物分子及其對生物感測器內反應動力學上的效應	96/08/01-99/07/31	NSC96-2112-M-001-024-MY3
李世炳	血液循環系統效率指標之研究-以數值模擬研究血液循環系統效率指標(3/3)	96/08/01-97/07/31	NSC96-2112-M-001-001
鄭海揚	重味物理現象學之研究(3/3)	96/08/01-97/07/31	NSC96-2112-M-001-003
陳志強	台俄雙邊合作計畫--心肌和神經學科中可激發和振盪系統之同步和控制之研究(3/3)	96/08/01-97/07/31	NSC96-2112-M-001-005
林耿慧	微流體元件裡的熱泳現象(3/3)	96/08/01-97/07/31	NSC96-2112-M-001-007
梁鈞泰	運動性生物個體之動力學研究	96/08/01-99/07/31	NSC96-2112-M-001-025-MY3
陳志強	非局部相互作用對可激發系統影響之研究	96/08/01-99/07/31	NSC96-2112-M-001-035-MY3
胡進錕	統計和計算物理在複雜系統之應用	96/08/01-99/07/31	NSC96-2911-M-001-003-MY3
李世昌	參與ATLAS實驗搜尋新物理現象暨以精密質譜儀探測宇宙中之反物質及暗物質Ⅶ暨CDF實驗光鍊維運/ATLAS實驗計算網格建構	96/08/01-97/07/31	NSC96-2911-M-001-004
王子敬	台灣微中子實驗-微中子與原子核的同調散射與暗物質找尋超低能探測器的研究	96/08/01-97/07/31	NSC96-2119-M-001-005

主持人	計　劃　名　稱	執行期間	計劃編號
任盛源	軟磁薄膜之彈性性質研究(3/3)	96/08/01-97/07/31	NSC96-2119-M-001-006
李尚凡	磁性材料中電流引發磁矩翻轉之研究	96/08/01-99/07/31	NSC96-2112-M-001-033-MY3
侯書雲	強子對撞實驗物理：CDF與Atlas實驗新物理及粒子搜尋--DF實驗eta-b meson搜尋暨ATLAS實驗di-boson物理研究	96/08/01-97/07/31	NSC96-2739-M-001-002
黃榮鑑	孤立波通過隆起底床引致碎波流場之三維數值研究(3/3)	96/08/01-97/07/31	NSC96-2221-E-001-009
陳洋元	重費米系統中近藤效應,磁有序與超導之相關性研究	96/08/01-97/07/31	NSC96-2112-M-001-036
陳洋元	奈米材料之新穎物理性質與量子尺寸效應研究(3/3)	96/08/01-97/07/31	NSC96-2120-M-001-003
張嘉升	吸附、雜質、及襯底對單一奈米結構的原子重組及物性的影響(2/3)	96/08/01-97/07/31	NSC96-2120-M-001-006
胡宇光	利用相位與繞射對比強化的動態奈米生醫影像(1/3)	96/08/01-97/07/31	NSC96-2120-M-001-009
張嘉升	中央研究院奈米科技核心設施服務計畫(2/3)	96/08/01-97/07/31	NSC96-2120-M-001-007
吳茂昆	新穎過渡金屬硫屬化合物之磁性與超導研究-子計畫一:新穎過渡金屬硫屬化合物之磁性與超導研究	96/08/01-99/07/31	NSC96-2112-M-001-026-MY3
李偉立	以新穎奈米結構製程技術，探索奈米結構元件之自旋相關特性	96/04/01-99/03/31	NSC96-2628-M-001-007-MY3
黃英碩	非接觸式原子力顯微術在水中及在真空中的應用	96/08/01-99/07/31	NSC96-2628-M-001-010-MY3
鄭弘泰	過渡金屬氧化物之電荷軌道序及奈米系統之電子結構研究	96/08/01-97/07/31	NSC96-2628-M-001-027
李偉立	以新穎奈米結構製程技術，探索奈米結構元件之自旋相關特性研究	96/08/01-97/12/31	NSC96-2738-M-001-002

主持人	計　劃　名　稱	執行期間	計劃編號
黃榮鑑	波浪與透水結構物互制之研究	96/08/01-97/07/31	NSC96-2221-E-001-033
陳啟東	以奈米線場效電晶體及光學感測器探討神經網路功能—電子束微影技術製備奈米線場效電晶體(子計畫二)(3/3)	96/08/01-97/07/31	NSC96-2627-M-001-007
李世昌	AMS-02熱控系統研製、測試及運作計畫	96/01/01-97/12/31	NSC96-2745-P-001-001-MY2
林誠謙	台灣WLCG Tier-2中心-Taiwan Analysis Facility之建置	96/08/01-97/07/31	NSC96-2911-M-001-006
林誠謙	數位典藏海外推展暨國際合作網路推動計畫	96/01/01-97/06/30	NSC96-3113-H-001-006
林誠謙	建立亞洲聯盟並推展歐盟EGEEⅡ計畫	96/06/01-97/03/31	NSC96-2923-I-001-001
王嵩銘	在CDF實驗中尋找超對稱模型存在的證據	96/10/01-97/07/31	NSC96-2112-M-001-038
林誠謙	數位典藏國際組織營運與拓展計畫	96/12/01-97/11/30	NSC96-3113-H-001-018
吳茂昆	第二期(2009-2014)奈米國家型科技計畫領域技術規劃	96/12/01-97/11/30	NSC96-3011-P-001-003
胡宇光	利用奈米醫學及微聚焦X光加強癌症之放射治療	96/12/01-97/12/31	NSC96-3011-P-001-004
張嘉升	以掃描穿隧顯微術取得半導體摻雜平面分佈資訊	96/01/01-96/12/31	台灣積體電路製造股份有限公司
胡宇光	分子與奈米生醫影像核心設施	96/07/01-96/12/31	財團法人國家同步輻射研究中心
李世昌	AMS-02熱控系統研製、測試及運作計畫	96/12/01-97/11/30	96-NSPO(B)-SP-LA01-01

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18. "Precise Measurement of the Top Quark Mass in the Lepton+Jets Topology at CDF II"
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21. “Search for Standard Model Higgs Bosons Produced in Association with W Bosons”
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23. “First Measurement of the W Boson Mass in Run II of the Tevatron”
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    i. T. Aaltonen et al., The CDF Collaboration,
    ii. FERMILAB-PUB-07-563-E.
28. “Observation of Orbitally Excited B_s Mesons”

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ii. FERMILAB-PUB-07-565-E.
iii. Submitted to Phys. Rev. Lett. October 23, 2007.

29. "Search for a High-Mass Diphoton State and Limits on Randall-Sundrum Gravitons at CDF"
    i. T. Aaltonen et al., The CDF Collaboration,
    ii. Phys. Rev. Lett. 99, 171801 (2007).
30. "Search for New Physics in High Mass Electron-Positron Events in p anti-p Collisions at √s =1.96 TeV"
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31. "Recent Results on B Spectroscopy at the Tevatron"
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    ii. FERMILAB-CONF-07-436-E.
    iii. Published Proceedings 15th International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2007), Munich, Germany, April 16-20, 2007.
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33. "Search for Heavy, Long-Lived Particles that Decay to Photons at CDF II"
    A. Abulencia et al., The CDF Collaboration,
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34. "Search for Resonant tt-bar Production in p anti-p Collisions at √s =1.96 TeV"
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37. “Search for Exclusive gamma gamma Production in Hadron-Hadron Collisions”
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38. “Measurement of the Top-Quark Mass using Missing E(t) + Jets Events with Secondary Vertex b-tagging at CDF II”
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39. “First Observation of the Decay B0(s) → D(s)- D+_s and Measurement of Its Branching Ratio”
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    i. T. Aaltonen et al., The CDF Collaboration,
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41. “Measurement of the Inclusive Jet Cross Section using the k_T Algorithm in p anti-p Collisions at √s =1.96 TeV with the CDF II Detector”
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44. “Measurement of sigma chi(c)2 B(chi(c)2 → J/psi gamma)/sigma chi(c)1 B(chi(c)1 → J/psi gamma) in p anti-p Collisions at √s =1.96 TeV”
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        i. T. Altonen et al., The CDF Collaboration,
        ii. FERMILAB-PUB-070-123-E.
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48. "Observation of WZ Production"
    A. Abulencia et al., The CDF Collaboration,
        i. Phys. Rev. Lett. 98, 161801 (2007).
49. "Measurement of the Top Quark Mass in p anti-p Collisions at √s =1.96 TeV using the Decay Length Technique"
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V

Academic Activities

Attendance in International Conference
中研院物理所九十六年度出席國際會議表
（2007年1月 ~ 2007年12月）

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
第十屆MMM/Intermag聯合會議10th MMM/Intermag Conference 2007	96.01.07-96.01.11	美國巴爾的摩	姚永德	本所
第十屆MMM/Intermag聯合會議10th MMM/Intermag Conference 2007	96.01.07-96.01.11	美國巴爾的摩	李尚凡	國科會
第十屆國際磁學暨磁性材料	96.01.07-96.01.11	美國巴爾的摩	楊仲準	國科會另案補助
第十屆國際磁學暨磁性材料	96.01.07-96.01.11	美國巴爾的摩	張晃暐	本所
第十屆國際磁學暨磁性材料	96.01.07-96.01.11	美國巴爾的摩	袁輔德	本所
第十屆國際磁學暨磁性材料	96.01.07-96.01.11	美國巴爾的摩	陳元宗	本所
從基礎科學到應用探討奈米科技	96.01.08-96.01.11	香港	褚家容	國科會
從基礎科學到應用探討奈米科技Croucher Advanced Study InstituteNano Science and Technology - From Basic Science to Device Applications	96.01.08-96.01.12	香港	陳啟東	國科會+本所
從基礎科學到應用探討奈米科技	96.01.08-96.01.12	香港	劉家榮	本所
從基礎科學到應用探討奈米科技	96.01.08-96.01.12	香港	林銘洲	本所
1st Asian winter school on string theory	96.01.08-96.01.19	韓國首爾	寺口俊介	本所
「EGEE All Activity Meeting + PMB」會議	96.01.16-96.01.18	義大利波隆納	林誠謙	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
23 nd APAN meeting	96.01.22-96.01.24	菲律賓馬尼拉	邱士軍	國科會
23 nd APAN meeting	96.01.22-96.01.26	菲律賓馬尼拉	張毓麟	國科會
23 nd APAN meeting	96.01.22-96.01.26	菲律賓馬尼拉	李忠憲	國科會
23 nd APAN meeting	96.01.22-96.01.26	菲律賓馬尼拉	陳昌盛	國科會
23 nd APAN meeting	96.01.22-96.01.26	菲律賓馬尼拉	許玉珠	國科會
23 nd APAN meeting	96.01.22-96.01.26	菲律賓馬尼拉	蔡明宏 洪銓鴻	國科會
WLCG Collaboration Workshop(Tier0/Tier1/Tier2)	96.01.22-96.01.26	瑞士日內瓦	施宏梁 任宏哲	國科會
23 nd APAN meeting	96.01.22-96.01.26	菲律賓馬尼拉	嚴漢偉	國科會
從統計力學到保角與量子場論From Statistical Mechanics to Conformal and Quantum Field Theory	96.01.26-96.02.08	澳大利亞墨爾本	胡進錕	國科會
The 19th Open Grid Forum	96.01.29-96.02.02	美國北卡羅來納州	蔡富名	國科會
The 19th Open Grid Forum	96.01.29-96.02.02	美國北卡羅來納州	陳信言 翁維瓏	國科會
ITAST 2007 East Coast Conference	96.02.02-96.02.04	美國Boston	吳茂昆	本所
Single Molecule Biophsics Winter School 2007	96.02.04-96.02.10	美國 Aspen	周家復	本所

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
「Pre Grid Deployment Board (GDB)」、「Grid Deployment Board (GDB)」	96.02.06-96.02.07	瑞士日內瓦	林誠謙	國科會
4th U.S. Air Force-Taiwan NanoScience Initiative Workshop	96.02.06-96.02.10	Houston	吳茂昆	本所
生理系統之複雜動力學國際研討會：從心臟到大腦	96.02.12-96.02.14	印度加爾各答	洪耀正	本所
第一屆名古屋大學冬季學校The 1st Nagoya Winter School	96.02.19-96.02.23	日本名古屋	胡進錕	本所
Herschel開放時段主要計劃研討會 Herschel Open Time Key Program Workshop	96.02.20-96.02.21	荷蘭 諾特維克	吳建宏	本所
2007年天體粒子CP破缺物理研討會 YongPyong Astro Particle CPV in Topical Physics 2007	96.02.20-96.02.23	韓國，首爾	李湘楠	國科會
2007年天體粒子CP破缺物理研討會 YongPyong Astro Particle CPV in Topical Physics 2007	96.02.20-96.02.23	韓國，首爾	李湘楠	由邀請單位支給
國際奈米科技展覽與研討會 NANO TECH 2007	96.02.21-96.02.24	日本東京	黃仰山 李嘉宜	國科會
The Minerals, Metals & Materials Society	96.02.25-96.03.01	美國奧蘭多	陳詩芸	國科會另案補助
APRICOT 2007 meeting	96.02.26-96.03.01	印尼巴里島	蔡明宏	國科會
Webwise 2007	96.02.28-96.03.02	美國華盛頓特區	林誠謙	國科會
第51屆生物物理研討會51st Biophysical Society Annual Meeting	96.03.03-96.03.07	美國巴爾地摩	周家復	本所
美國生物物理年會American Biophysics Society annual meeting	96.03.03-96.03.07	美國Baltimore	張家靖	本所

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
51st Annual Meeting	96.03.03-96.03.07	巴爾的摩	陳南佑	主題
APS March Meeting	96.03.03-96.03.09	美國丹佛、休士頓	柯珍	李氏基金會
OSG Consortium Meeting	96.03.05-96.03.08	美國聖地牙哥	嚴漢偉	國科會
APS March Meeting 2007	96.03.05-96.03.09	美國丹佛	陳彥龍	本所
APS March Meeting 2007	96.03.05-96.03.09	美國丹佛	林耿慧	國科會+本所
2007 APS March Meeting	96.03.05-96.03.09	Denver, Colorado	李定國	國科會
2007美國3月春季物理會議APS March Meeting 2007	96.03.05-96.03.09	USA,Denver	陳洋元	本所
美國物理年會March Meeting (2007)	96.03.05-96.03.09	Denver, Colorado, USA	張嘉升	本所
2007美國物理年會2007 American Physical Society March Meeting	96.03.05-96.03.09	美國、丹佛市(Denver)	蘇維彬	本所
美國物理年會American Physics Society March meeting	96.03.05-96.03.09	美國 Denver	張家靖	本所
美國物理年會	96.03.05-96.03.09	美國丹佛	林保安	國科會
美國物理年會	96.03.05-96.03.09	美國丹佛	呂欣明	本所
OSG Consortium	96.03.06-96.03.08	美國聖地牙哥	林誠謙	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
SHARE Review	96.03.08-96.03.09	比利時 布魯塞爾	陳信言	國科會
SHARE Review	96.03.08-96.03.09	比利時 布魯塞爾	李友專	國科會
SHARE Review	96.03.08-96.03.09	比利時 布魯塞爾	李宏春	國科會
台以雙邊研討會	96.03.11-96.03.17	以色列耶路撒冷	李定國	院方其他
PNC 2007 Annual conference 會前會	96.03.12-96.03.16	美國舊金山	黃珮華 廖傳慧	國科會
台以雙邊研討會	96.03.13-96.03.14	以色列耶路撒冷	吳茂昆	院方學術審議及研究獎助
垮克膠子電漿物理與冷原子物理研討會The interface of quark-gluon plasma physics and cold-atom physics	96.03.19-96.03.23	Trento,Italy	葉崇傑	國科會
GEO Grid meeting & PRAGMA12	96.03.20-96.03.22	泰國曼谷	謝錫堃	國科會
GEO Grid meeting & PRAGMA12	96.03.20-96.03.22	泰國曼谷	邱士軍 何立勇 王麒瑋 陳宇軒	國科會
GEO Grid meeting & PRAGMA12	96.03.20-96.03.23	泰國曼谷	林芳邦	國科會
Deep Ocean Anti-Neutrino Observatory Workshop（DOANOW）	96.03.23-96.03.27	美國夏威夷	黃明輝	本所
The 54th Spring Meeting, 2007	96.03.26-96.03.28	Kanagawa, Japan	李定國	其他

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
德國物理年會 Membrane Interacting Peptides and Proteins	96.03.26-96.03.28 ＆96.03.29- 96.03.31	德國	鄂柏安	本所
Journal of Physics, D- Applied Physics編輯委員會會議Journal of Physics, D-Applied Physics編輯委員會會議	96.03.29-96.04.01	倫敦	胡宇光	本所
「Pre Grid Deployment Board (GDB)」、「Grid Deployment Board (GDB)」	96.04.03-96.04.04	捷克布拉格	林誠謙	本所
The 32nd Conference of the Middle European Cooperation in Statistical Physics	96.04.16-96.04.18	波蘭Ladek Zdroj	巴克	本所
6th EUChinaGRID Tutorial for Users and System Administrators	96.04.16-96.04.20	北京	邱士軍	國科會
AICHE Meeting	96.04.22-96.04.23	美國丹佛、休士頓	柯珍	李氏基金會
CRRB(Computing Resources Review Board)與RRB(LHC Resources Review Board)	96.04.23-96.04.25	瑞士日內瓦	林誠謙	國科會
CRRB(Computing Resources Review Board)與RRB(LHC Resources Review Board)	96.04.23-96.04.25	瑞士日內瓦	林誠謙	國科會
2007紅火蟻會議2007 Annual Imported Fire Ant Conference	96.04.23-96.04.26	USA,Gainesville	陳洋元	本所
2007紅火蟻會議2007 Annual Imported Fire Ant Conference	96.04.23-96.04.26	USA,Gainesville	陳洋元	本所
2007紅火蟻會議	96.04.23-96.04.26	美國Gainesville	林暉閔	主題
2007紅火蟻會議	96.04.23-96.04.26	美國Gainesville	曾伃菁	國科會
2007紅火蟻會議	96.04.23-96.04.26	美國Gainesville	黃怡凡	主題

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
HealthGrid 2007	96.04.24-96.04.27	瑞士日內瓦	李宏春	國科會
From Computational Biophysics to Systems Biology (CBSB07)	96.05.02-96.05.04	德國Julich	海耳倫	本所
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.11	英國曼徹斯特	林誠謙	國科會
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.11	英國曼徹斯特	林誠謙	國科會
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.11	英國曼徹斯特	邱士軍	國科會
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.11	英國曼徹斯特	黃珮華	國科會
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.11	英國曼徹斯特	李宏春	國科會
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.11	英國曼徹斯特	吳盈達	國科會
The 20th Open Grid Forum - OGF20/EGEE 2nd User Forum	96.05.07-96.05.13	英國曼徹斯特	翁維瓏	國科會
第五屆味物理及CP破壞國際會議5th Flavor Physics and CP Violation Conference	96.05.12-96.05.16	斯洛維尼亞、Bled	鄭海揚	本所
第五屆味物理及CP破壞研討會5th Flavor Physics and CP Violation Conference	96.05.12-96.05.16	斯洛維尼雅,Bled	李湘楠	國科會+本所
Origins of Dark Energy	96.05.14-96.05.20	加拿大多倫多	李碩天	本所
EGEE II First Review	96.05.15-96.05.16	瑞士日內瓦	林誠謙	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
日本科學振興學會第141委員會第128次會議The 128th Meeting of the 141st Committee of Japan Society for Promotion of Science (JSPS-141)	96.05.15-96.05.17	日本、廣島	郭鴻曦	本所
2007溫度與熱量測國際會議TEMPMEKO 2007	96.05.21-96.05.25	Calgary, Canada	陳洋元	國科會+主題
2007溫度與熱量測國際會議	96.05.21-96.05.25	加拿大Calgary	陳伯仲	國科會
National Advisory Board 第二次會議The Second NAB Meeting	96.05.25-96.05.28	中國、北京	李湘楠	自理
前沿科學國際研討會International Conference on Science Frontier	96.05.26-96.05.27	中國、北京	李湘楠	自理
國際磁性材料及其應用會議International Symposium on Advanced Magnetic Materials and Applications(1st ISAMMA)	96.05.28-96.06.01	韓國 濟州	姚永德	國科會
國際磁性材料及其應用會議	96.05.28-96.06.01	韓國濟州	張晃暐 袁輔德	本所
國際磁性材料及其應用會議	96.05.28-96.06.01	韓國濟州	陳元宗	國科會另案補助
國際磁性材料及其應用會議	96.05.28-96.06.01	韓國濟州	魏大華	國科會另案補助
國際磁性材料及其應用會議	96.05.28-96.06.01	韓國Jeju	歐敏男	國科會
International Conference on Computational Science 2007	96.05-27-96.05.30	北京	鄒忠毅	國科會
2007年國際核物理會議International Nuclear Physics Conference 2007	96.06.03-96.06.08	日本、東京	曾詣涵	本所
2007年國際核物理會議International Nuclear Physics Conference 2007	96.06.03-96.06.08	日本、東京	曾詣涵	本所

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
Grid Asia 2007 & 3rd APGrid PMA Face-to-Face Meeting	96.06.04-96.06.08	新加坡	林誠謙	國科會
Grid Asia 2007 & 3rd APGrid PMA Face-to-Face Meeting	96.06.04-96.06.08	新加坡	任宏哲	國科會
Grid Asia 2007 & 3rd APGrid PMA Face-to-Face Meeting	96.06.04-96.06.08	新加坡	簡禎儀	國科會
Grid Asia 2007 & 3rd APGrid PMA Face-to-Face Meeting	96.06.04-96.06.08	新加坡	蔡明宏	國科會
Grid Asia 2007 & 3rd APGrid PMA Face-to-Face Meeting	96.06.04-96.06.08	新加坡	黃珮華	國科會
Grid Asia 2007 & 3rd APGrid PMA Face-to-Face Meeting	96.06.04-96.06.08	新加坡	嚴漢偉	國科會
IBM商業領袖論壇The IBM Business Leadership Forum	96.06.05-96.06.08	俄羅斯聖彼得堡	吳茂昆	國科會
The Third Shanghai International Symposium on Nonlinear Sciences and Applications	96.06.06-96.06.10	中國大陸上海	陳志強	國科會
The International Workshop on Nonlinear Brain Dynamics	96.06.09-96.06.10	中國大陸杭州	陳志強	國科會
ROC manager's meeting and Grid Operations Workshop	96.06.11-96.06.15	瑞典斯德哥爾摩	蔡明宏	國科會
ROC manager's meeting and Grid Operations Workshop	96.06.11-96.06.15	瑞典斯德哥爾摩	廖舒婷	國科會
LCG 3D - Database Administrator Meeting	96.06.12-96.06.13	義大利波隆納	魏旭章	國科會
郭登蛋白質研究會議Gordon Research Conference on Proteins	96.06.17-96.06.22	美國Plymouth, NH	胡進錕	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
The Road to Room Temperature Superconductivity	96.06.17-96.06.23	Loen, Norway	吳茂昆	主題計畫
The Road to Room Temperature Superconductivity	96.06.17-96.06.23	Loen, Norway	吳茂昆	主題計畫
EGEE-III PMB meeting	96.06.18-96.06.19	瑞士日內瓦	林誠謙	國科會
中國顆粒學會超微顆粒專業委員會第五屆年會暨海峽兩岸納米顆粒學術研討會	96.06.19-96.06.23	中國武漢	任盛源	本所
81屆膠態與表面科學會議81st ACS Colloid & Surface Science Symposium	96.06.24-96.06.27	美國紐阿克	林耿慧	本所
2007年相位回復與同相散射國際研討會 International Workshop on Phase Retrieval and Coherent Scattering	96.06.25-96.06.28	美國舊金山	李定國	本所
2007年相位回復與同相散射國際研討會	96.06.25-96.06.28	美國舊金山	陳健群	主題
國際奈米磁性研討會International Conference on Nanoscale Magnetism(ICNM2007)	96.06.25-96.06.29	Istanbul,Turkey	姚永德	國科會
國際奈米磁性研討會International Conference on Nanoscale Magnetism(ICNM2007)	96.06.25-96.06.29	Istanbul,Turkey	姚永德	國科會
IHEPCCC、WLCG OB meeting、Storage Workshop、Grid Deployment Board、EGEE All Activity meeting	96.06.28-96.07.06	瑞士日內瓦	林誠謙	國科會
第十七屆國際海洋工程研討會17th Int. Offshore (Ocean) and Polar Engineering Conference	96.07.01-96.07.06	葡萄牙 里斯本	黃榮鑑	國科會
17th Int. Offshore(Ocean) and Polar Engineering Conference	96.07.01-96.07.06	葡萄牙里斯本	謝志敏	本所
Statics and dynamics of granular media and colloidal suspensions	96.07.04-96.07.06	義大利Napoli	杜其永	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
Quantum Phases of Matter	96.07.05-96.07.12	中國北京	李定國	主題計畫業務費
第18屆相對論重力及第7屆重力波國際會議18th International Conference on General Relativity & Gravitation and 7th Edoardo Amaldi Conference on Gravitational Waves	96.07.08-96.07.14	澳洲 雪梨	吳建宏	國科會+本所
第三屆大洋洲及亞太地區生物光子研討會3rd Asian and Pacific Rim Symposium on Biophotonics,	96.07.09-96.07.11	澳洲、布里斯本	胡宇光	本所
第三屆大洋洲及亞太地區生物光子研討會3rd Asian and Pacific Rim Symposium on Biophotonics,	96.07.09-96.07.11	澳洲、布里斯本	胡宇光	國科會
Participation to the 23rd International Conference on Statistical Physics	96.07.09-96.07.13	義大利 Genova	杜其永	本所
統計物理國際會議23International Conference on Statistical Physics 23	96.07.09-96.07.13	義大利熱那亞	李世炳	國科會 +本所
第23屆IUPAP統計物理國際會議the 23rd IUPAP International Conference on Statistical Physics	96.07.09-96.07.13	義大利熱那亞	胡進錕	國科會
統計物理國際會議23International Conference on Statistical Physics 23	96.07.09-96.07.13	義大利熱那亞	陳彥龍	本所
戈登物理、化學、微流體研討會MICROFLUIDICS, PHYSICS & CHEMISTRY OF Gordon Research conference	96.07.15-96.07.20	美國、波士頓	周家復	本所
第七屆粒子物理、核物理、宇宙學主題研討會7th Advanced topics in the interdisciplinary fields of particle physics, nuclear physics, and cosmology.	96.07.22-96.07.28	中國，雲南	李湘楠	自理
New Frontiers in colloidal Physics:A Bridge between Micro- and Macroscopin in soft-matter	96.07.25-96.07.27	日本京都	賴宥丞	本所
亞太量子資訊科學研討會及會議Asia-Pacafic Workshop and Conference on Quantum Information Science	96.07.30-96.08.02	新加坡	張志義	本所
威海高能物理前沿主題暑期研討會Weihai Summer Topic Seminar on the Frontiers of High Energy Physics.	96.07.31-96.08.06	山東，威海	李湘楠	自理

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
第五十回日本蟻類研究大會(the 50th annual meeting of Myrmecological Society of Japan)	96.08.04-96.08.06	日本沖繩那霸	林暉閔	主題
Topical Problems of Biophotonics-2007	96.08.04-96.08.11	俄羅斯下諾夫哥羅德	陳志強	國科會 +本所
Topical Problems of Biophotnics-2007	96.08.04-96.08.11	俄羅斯下諾夫哥羅德	黎壁賢	國科會
2007魅物理會議Charm 2007 Workshop	96.08.05-96.08.08	美國，綺色佳	鄭海揚	本所
2007年第一屆國際電子工程協會在奈米分子醫學及工程的運用上1st IEEE International Conference on Nano/Molecular Medicine and Egnineering in 2007	96.08.07-96.08.09	中國大陸 澳門	胡宇光	國科會
暗物質暗能量研討會Workshop on Dark Matter and Dark Energy	96.08.13-96.08.17	中國，北京	吳建宏	國科會+本所
第九屆生物與同步輻射會議	96.08.13-96.08.17	英國＆瑞士	劉啟人	國科會
第九屆生物與同步輻射會議	96.08.13-96.08.17	英國＆瑞士	錢家琪	國科會
第八屆國際微循環醫學聯合會	96.08.15-96.08.19	美國密爾瓦基	詹明宜	本所＋國科會
亞洲太平洋理論物理學會 超導與介觀量子現象研討會APCTP Workshop on Superconductivity and Mesoscopic Quantum Phenomena	96.08.18-96.08.20	韓國浦項	陳啟東	國科會
「主持亞太物理學聯合會會員大會及理事會」	96.08.18-96.08.23	韓國浦項	鄭天佐	本所
73rd IFLA General Conference and Council	96.08.19-96.08.23	南非德班	陳雪華	國科會
第八屆新穎超導體的能譜學國際研討會(The 8th International Conference on Spectroscopies in Novel Superconductors)	96.08.19-96.08.24	日本仙台	福島昇	本所

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第八屆新穎超導體的能譜學國際研討會(The 8th International Conference on Spectroscopies in Novel Superconductors)	96.08.19-96.08.25	日本仙台	周崇斌	本所
第八屆新穎超導體的能譜學國際研討會(The 8th International Conference on Spectroscopies in Novel Superconductors)	96.08.19-96.08.25	日本仙台	黃信銘	本所
CERN School of Computing 2007	96.08.19-96.08.31	克羅埃西亞杜布洛尼克	廖舒婷	國科會
CERN School of Computing 2007	96.08.19-96.08.31	克羅埃西亞杜布洛尼克	黃惠慈	國科會
第八屆新穎超導體的能譜學國際研討會The 8th International Conference on Spectroscopies in Novel Superconductors	96.08.20-96.08.24	日本仙台	李定國	主題計畫
第10屆亞洲太平洋物理會議The 10th Asia Pacific Physics Conference (APPC10)	96.08.21-96.07.22	韓國浦項	陳啟東	國科會
第十屆亞太物理學聯合會The 10th Asia Pacific Physics Conference (APPC10)	96.08.21-96.08.24	韓國浦項	胡宇光	國科會
台灣-瑞典材料研討會Sweden-Taiwan workshop in Materials Science	96.08.26-96.09.01	Linkö ping,Sweden	陳啟東	國科會
24th APAN meeting	96.08.26-96.09.01	大陸西安	蔡明宏	國科會
24th APAN meeting	96.08.27-96.08.31	大陸西安	林誠謙	國科會
24th APAN meeting	96.08.27-96.08.31	大陸西安	陳信言	國科會
24th APAN meeting	96.08.27-96.08.31	大陸西安	洪銓鴻	國科會
24th APAN meeting	96.08.27-96.08.31	大陸西安	李士傑	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
2007International Symposium on Crystal Science and Technology	96.08.28-96.09.02	日本山梨大學	李偉立	由邀請單位支給
2007國際物理模擬流場與擴散現象PHYSMOD 2007	96.08.29-96.08.31	法國奧爾良	蕭葆義	本所
亞太重力及宇宙論國際會議The 8th Asia-Pacific International Conference on Gravitation and Astrophysics.(ICGA8)	96.08.29-96.09.01	日本，奈良	余海禮	本所
「WLCG Collaboration Workshop」及「Computing in High Energy and Nuclear Physics (CHEP)」	96.09.01-96.09.07	加拿大維多利亞	林誠謙	國科會
「WLCG Collaboration Workshop」及「Computing in High Energy and Nuclear Physics (CHEP)」	96.09.01-96.09.07	加拿大維多利亞	任宏哲	國科會
Computing in High Energy and Nuclear Physics (CHEP)	96.09.03-96.09.07	加拿大維多利亞	蔡明宏	國科會
HPC Asia, 2007	96.09.08-96.09.12	韓國首爾	謝璨隆	本所
3rd International Workshop第3屆表面物理國際研討會	96.09.08-96.09.16	波蘭, Wroclaw	張嘉升	本所
HPC Asia 2007 (the 9th International Conference on High Performance Computing in Asia Pacific Region)	96.09.09-96.09.12	韓國 首爾	侯書雲	本所
第19屆雜訊及起伏國際會議the 19th International Conference on Noise and Fluctuations	96.09.09-96.09.14	日本東京	胡進錕	國科會+本所
戈登幹細胞及癌症研討會Gordon Conference-STEM CELLS & CANCER	96.09.09-96.09.14	美國，Bozeman	周家復	本所
第19 屆噪音與擾動國際研討會	96.09.09-96.09.14	日本東京	洪耀正	北區國家理論中心
UK e-Science All Hands Meeting	96.09.10-96.09.13	英國Nottingham (諾丁翰)	林誠謙	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
第十一屆介子核子物理和核子結構國際會議11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon	96.09.10-96.09.14	德國尤利希	章文箴	國科會 + 本所
第20屆歐洲物理數體問題會議20th European Conference on Few body problems in Physics.	96.09.10-96.09.14	義大利，Pisa	曾詣涵	本所
International Conference on Topics in Astroparticle and Underground Physics (TAUP)	96.09.10-96.09.16	日本仙台	張曦明	國科會
2007年天文粒子物理國際會議International Conference on Topics in Astroparticle and Underground Physics (TAUP) 2007	96.09.11-96.09.15	日本仙台	王子敬	國科會
International Conference on Topics in Astroparticle and Underground Physics (TAUP)	96.09.11-96.09.15	日本仙台	林興德	國科會
Words and Faces: an International Workshop on Cognitive Neuroscience in honour of Professor Ryoji Suzuki	96.09.12-96.09.14	澳洲	鄭仕坤 李俊仁 吳嫻 洪意惠	主題
11th EUGrid PMA Meeting	96.09.19-96.09.21	希臘塞薩羅尼基	簡禎儀	國科會
7th EUChinaGRID Tutorial	96.09.22-96.09.23	大陸濟南	蔡富名	國科會
PRAGMA 13	96.09.23-96.09.25	美國香檳	翁維瓏	國科會
第十八屆離子束分析國際會議18th International Conference on Ion Beam Analysis	96.09.23-96.09.28	印度（India），海德拉巴（Hyderrabad）	余岳仲	國科會+本所
第18屆離子束分析國際會議	96.09.23-96.09.28	印度海德拉	許智祐	本所
第四屆味物理國際會議The 4th International Conference on Flavor Physics	96.09.24-96.09.28	中國，北京	鄭海揚	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
EGEE’07 Conference	96.10.01-96.10.05	匈牙利、布達佩斯	林誠謙	國科會
EGEE’07 Conference	96.10.01-96.10.05	匈牙利布達佩斯	嚴漢偉	國科會
EGEE’07 Conference	96.10.01-96.10.05	匈牙利布達佩斯	蔡明宏	國科會
EGEE’07 Conference	96.10.01-96.10.05	匈牙利布達佩斯	廖舒婷	國科會
EGEE’07 Conference	96.10.01-96.10.05	匈牙利布達佩斯	黃珮華	國科會
EGEE’07 Conference	96.10.01-96.10.05	匈牙利布達佩斯	李宏春	國科會
EGEE’07 Conference	96.10.01-96.10.05	匈牙利布達佩斯	翁維瓏	國科會
007歐洲複雜系統研究會	96.10.01-96.10.05	德國 Dresten	曾玠郡	國科會
第7屆韓國高等研究院蛋白質結構及功能會議the 7th KIAS-Soongsil Conference Protein Structure and Function	96.10.04-96.10.06	韓國首爾	胡進錕	國科會
e-Social Science Conference 2007	96.10.07-96.10.09	美國 Ann Arbor	嚴漢偉	國科會
仿生生醫工程國際研討會 the second International Symposium of Bio-Inspired Engineering (ISBIE),	96.10.08-96.10.10	以色列	周家復	由邀請單位支給
第十二屆強子質譜國際會議The 12th International Conference on Hadron Spectroscopy	96.10.08-96.10.13	義大利，羅馬	鄭海揚	國科會 + 本所
Fall 2007 Internet 2 Member Meeting	96.10.08-96.10.21	美國聖地牙哥	陳信言	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
ICON Steering Committee Meeting	96.10.10-96.10.13	美國休士頓	吳茂昆	國科會
第十四屆全球多樣性資訊機構理事會議	96.10.14-96.10.19	荷蘭阿姆斯特丹	賴昆祺	國科會
國際電機電子工程學會07年磁性物質年會	96.10.15-96.10.19	澳洲柏斯	于淳	國科會
The 21st Open Grid Forum - OGF21	96.10.15-96.10.19	美國西雅圖	翁維瓏	國科會
Taiwan-Switzerland meeting	96.10.15-96.10.21	瑞士蘇黎克	吳茂昆	國科會
第四屆台瑞雙邊研討會4th Swiss-Taiwan NanoTechnology Conference	96.10.16-96.09.19	蘇黎世	周家復	本所
第三屆台瑞雙邊研討會3rd Swiss-Taiwan NanoTechnology Conference	96.10.16-96.10.19	瑞士 蘇黎世	胡宇光	國科會
第三屆台瑞雙邊會議3th Swiss-Taiwanese Scientific Workshop on Challenges and Advanced Methods in Nanosciences and Bioimaging	96.10.16-96.10.19	瑞士蘇黎士 (Zurich)	陳啟東	主題計畫
第三屆台瑞雙邊研討會3rd Swiss-Taiwanese Scientific Workshop on Challenges and Advanced Methods in Nanosciences and Bioimaging	96.10.16-96.10.19	蘇黎世	李定國	國科會+主題
第三屆台瑞雙邊奈米科學研討會	96.10.16-96.10.20	蘇黎世	鄭天佐	國科會+本所
太平洋鄰里協會(PNC) 2007年年會暨聯合年會	96.10.18-96.10.20	美國加州奧克蘭	林誠謙	國科會
太平洋鄰里協會(PNC) 2007年年會暨聯合年會	96.10.18-96.10.20	美國加州奧克蘭	林誠謙	國科會
太平洋鄰里協會(PNC) 2007 年年會暨聯合年會	96.10.18-96.10.20	美國加州 柏克萊大學	林國平	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
太平洋鄰里協會(PNC) 2007 年年會暨聯合年會	96.10.18-96.10.20	美國加州柏克萊大學	彭慰	國科會
太平洋鄰里協會(PNC) 2007 年年會暨聯合年會	96.10.18-96.10.20	美國加州柏克萊大學	項潔	國科會
CRRB(Computing Resources Review Board)與RRB(LHC Resources Review Board)	96.10.22-96.10.24	瑞士、日內瓦	林誠謙	國科會
2007年國際原子層級分析研討會第六次大會6th International Symposium on Atomic Level Characterizations ‘07	96.10.28-96.11.02	日本、金澤(Kanazawa)	郭鴻曦	國科會
第十屆第一原理電子結構計算亞洲會議The 10th Asian Workshop on First-Principles Electronic Structure Calculations	96.10.29-96.10.31	日本廣島	鄭弘泰	國科會+本所
The 2007 IEEE Nuclear Science Symposium and Medical Imaging Conference	96.10.29-96.11.02	美國 夏威夷	侯書雲	本所
第二屆味動力學研討會2nd Workshop on Flavour Dynamics	96.11.03-96.11.10	葡萄牙，Albufeira	李湘楠	國科會
American Institute of Chemical Engineering Annual Meeting 2007	96.11.04-96.11.09	美國猶他洲	陳彥龍	國科會
LHC OPN Operation Meeting、Pre Grid Deployment Board、Grid Deployment Board	96.11.05-96.11.07	瑞士日內瓦	林誠謙	國科會
LHC OPN Operation Meeting	96.11.05-96.11.07	瑞士日內瓦	蔡明宏	國科會
第52屆磁性及磁性材料年會52nd Annual Conference on Magnetism and Magnetic	96.11.05-96.11.09	Tampa, Florida, USA	任盛源	國科會
第52屆磁性及磁性材料研討會52nd Magnetism and Magnetic Materials Conference	96.11.05-96.11.09	Tampa,Florida, USA	劉鏞	國科會
第52屆磁性及磁性材料年會	96.11.05-96.11.09	Tampa, Florida, USA	張晃暐	主題

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
第52屆磁性及磁性材料年會	96.11.05-96.11.09	Tampa, Florida, USA	袁輔德	主題
第52屆磁性及磁性材料年會	96.11.05-96.11.09	Tampa, Florida, USA	黃斯衍	主題
HEPiX Fall 2007	96.11.05-96.11.09	美國	李宏德	國科會
Do-Son school on Advanced Computing and GRID Technologies for Research	96.11.05-96.11.16	越南、河內	林誠謙	國科會
博物館電腦網路協會（MCN, Museum Computer Network）2007年會	96.11.07-96.11.10	美國芝加哥	陳淑君	國科會
Dynamic aspects of biological networks	96.11.09-96.11.15	韓國釜山、浦項	陳志強	國科會
第四屆杭州模擬物理國際會議The 4th International Workshop Hangzhou on Statistical	96.11.10-96.11.11	中國浙江省杭州市	胡進錕	主題計畫業務費
Super Computing 2007 (SC07)	96.11.10-96.11.16	美國內華達州雷諾市	翁維瓏	國科會
Super Computing 2007 (SC08)	96.11.10-96.11.16	美國內華達州雷諾市	蔡富名	國科會
第九屆原子表面控制和奈米結構研討會9th International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures	96.11.11-96.11.15	東京	張嘉升	主題計畫
第九屆原子表面控制和奈米結構研討會	96.11.11-96.11.15	日本東京	方崇開	國科會
第九屆原子表面控制和奈米結構研討會	96.11.11-96.11.15	日本東京	張淵智	主題
第九屆原子表面控制和奈米結構研討會	96.11.11-96.11.15	日本東京	李奕賢	自理

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
國際機械工程會議Int. Mechanical Engineering Congress & Exposition	96.11.11-96.11.16	美國西雅圖	黃榮鑑	國科會
第三屆海峽兩岸統計物理學術會議The 3rd Cross-Strait Conference on Statistical Physics	96.11.12-96.11.16	中國浙江省 杭州市及金華市	胡進錕	主題計畫
第三屆海峽兩岸統計物理學術會議	96.11.12-96.11.17	中國杭州	杜其永	國科會
第八屆 韓國,日本,台灣之強電子相關聯系統研討:複合材料與其會議	96.11.15-96.11.17	韓國首爾	陳啟亮	主題
WLCG Service Reliability Workshop	96.11.26-96.11.30	瑞士日內瓦	魏旭章	國科會
Yukawa International Seminar 2007	96.11.26-96311.29	日本京都	李定國	主題計畫
NA2 face to face meeting	96.11.27-96.11.28	捷克布拉格	黃珮華	國科會
2007亞洲奈米論壇 & ANF標準化工作小組會議ANFoS2007& ANF Standardization Working Group Meeting	96.11.29-96.12.01	Malaysia, Kuala Lumpur	吳茂昆	國科會
2007國際組織工程及再生醫藥學會亞太區會議 Tissue Engineering International & Regenerative Medicine Society Asia-Pacific Chapter Meeting 2007	96.12.03-96.12.05	日本東京	林耿慧	國科會
WLCG OB meeting、Pre Grid Deployment Board、Grid Deployment Board	96.12.03-96.12.05	瑞士、日內瓦	林誠謙	國科會
ATLAS Tier-1會議	96.12.04-96.12.06	瑞士日內瓦	施宏良	國科會
第15屆國際掃描探針顯微術研討會15th International Colloquium on Scanning Probe Microscopy	96.12.05-96.12.08	日本、Atagawa	蘇維彬	主題計畫
EGEE Grid User and Application Developer Training	96.12.09-96.12.14	馬來西亞吉隆坡	蔡明宏	國科會

會　議　名　稱	會議期間	舉辦地點	出席人員	經費來源
EGEE Grid User and Application Developer Training	96.12.10-96.12.14	馬來西亞吉隆坡	任宏哲	國科會
BioinfoGRID Symposium 2007	96.12.11-96.12.12	義大利米蘭	李宏春	國科會
Hong Kong Forum of Physics - Frontiers in Condensed Matter	96.12.14-96.12.16	香港	李定國	國科會
第五屆重味物理與CP破壞會議5th Heavy Flavor Physics and CP violation Workshop	96.12.14-96.12.19	中國，海南省中亞市	鄭海揚	國科會

Institute Sponsored Meetings

本所協辦會議

研討會名稱	會議期間	地點	主辦人
2007 NCTS March Workshop on Critical Phenomena and Complex Systems	96.03.02 - 96.03.03	台灣大學物理系 中研院物理所	胡進錕
NCTS Spring Workshop 2007國家理論科學中心：複雜系統與複雜訊號春季研討會	96.03.23 - 96.03.24, 96.03,26	台灣大學物理系 中研院物理所	胡進錕
第20屆粒子與場春季學校	96.04.01 - 96.04.04	台灣大學凝態中心	李湘楠
The 6th Asia-Pacific Workshop on Frontiers of Condensed-Matter Science and Symposium on 20-years Anniversary of Discovery of YBCO 第六屆亞太前瞻凝體物理暨釔鋇銅氧超導體發現 二十週年研討會	96.04.13 - 96.04.16	中研院物理所	李定國
2007 NCTS May Workshop on Critical Phenomena and Complex Systems	96.05.18 - 96.05.19, 96.05.21	文化大學物理系 中研院物理所	胡進錕
2007 Taipei International Workshop for Soft Matter and Biophysics 2007台北國際軟物質與生物物理研討會	96.05.21 - 96.05.24	中研院物理所	阮文滔
2007 NCTS June Workshop on Critical Phenomena and Complex Systems	96.06.29 - 96.06.30	台灣大學物理系 中研院物理所	胡進錕
2007台灣生物與複雜系統國際研討會	96.08.05 - 96.08.12	中研院物理所	胡進錕
2007 NCTS October Workshop on Critical Phenomena and Complex Systems **2007國家理論科學中心：臨界現象與複雜系統秋季研討會**	96.10.12 - 96.10.15	中研院物理所	胡進錕
2007 NCTS December Workshop on Critical Phenomena and Complex Systems	96.12.07, 96.12.10 96.12.08-96.12.09	中研院物理所 中原大學物理系	胡進錕

Seminars
中央研究院物理研究所九十六年度演講一覽表
(2007 January ~ December)

演講題目	演講者	所屬機構	日期
Unconditionally Secure Quantum Bit Commitment	Horace Yuen	Nothwestern University, USA	2007/1/2
Giant Optical Nonlinearity of Liquid Crystals	Boris Y. Zeldovich	University of Central Florida	2007/1/3
Quantum Stress Tensor Fluctuations in Inflation	Larry Ford	Tufts University	2007/1/5
Quantum Correlation as Magic	徐立義	中原大學物理系	2007/1/10
QCD Corrections to Higgs Pair Production in Bottom Quark Fusion	Chung Kao	University of Oklahoma	2007/1/12
Access the Role of Microenvironment in the Self-assembly and Contractility of Cardiac Myocytes - Theoretical and Experimental Approaches	Po-ling Kuo	Harvard University	2007/1/15
Spin cluster as qubit and its logic gates	Wang Shun-Jin	Sichuan University, China	2007/1/17
Silicon-based Nano devices for detection of DNA molecules	陳啟東	中央研究院物理研究所	2007/1/17
Measurement of Lambdab Relative Branching Fractions and Search for Anomalous Production of Diphoton + e/mu at CDF	Shin-Shan Yu	Fermilab/CDF	2007/1/19

演講題目	演講者	所屬機構	日期
Imaging and directing living matter from cells to single moecules at submolecular resolution	Daniel Muller	Biotechnological Center, University of Technology Dresden	2007/1/22
Experiments with photolithographically produced superconducting pi-rings	John Robert Kirtley	IBM Research Division	2007/1/22
Nanofabrication, Nanomechanics and Compositional Mapping in force microscopy	Ricardo Garcia	Instituto de Microelectronica de Madrid	2007/1/22
Shadowing growth of nanostructures	Gwo-Ching Wang	Department of Physics, Rensselaer Polytechnic Institute, U. S. A.	2007/1/23
DNA電性初探	施奇廷	東海大學物理系	2007/1/23
Effects of the non-standard interaction on neutrino oscillation experiments	Hiroaki Sugiyama	KEK	2007/1/26
Slow Conformational Dynamics and Unfolding of the Calmodulin C-terminal Domain	Yng-Gwei Chen	National Institute of Health	2007/1/29
見皮也見骨:活細胞顯微術	李超煌	中央研究院 應用科學研究中心	2007/1/30
String Black Hole Transition	Dmitri Galtsov	Moscow University	2007/1/31
RAPID MIXING IN AN OVERLAPPING CRISSCROSS MICROMIXER	王儷霖	清華大學 動力機械工程學系研究所	2007/1/31
Anisotropic interactions of single magnetic dopants in III-V semiconductors	Jian-Ming Tang	University of Iowa	2007/2/6

演講題目	演講者	所屬機構	日期
elastic behavior of composite actin and microtubule networks	Yi-Chia Lin	Harvard University	2007/2/12
Characterization and application of single fluorescent nanodiamonds as cellular biomarkers	Chi-Cheng Fu	National Tsing-Hua Universtiy	2007/2/26
Cosmic rays and the weather	Huang Ming-Huei	National United University	2007/3/9
Mechanical Responses of Matters with Microstructures: Granular flows, Foams and Microbubbles	J.-C. Tsai	Northwestern University	2007/3/12
Charged fluid dynamics in scalar-tensor theories of gravity with torsion	Chih-Hung Wang	Lancaster University	2007/3/16
The 4th IoP/IBMS joint meeting	陳彥龍博士 徐松錕博士	中研院物理所 中研院生物醫學科學研究所	2007/3/20
從四分溪談到幹細胞研究	游正博	中央研究院 細胞與個體生物學研究所	2007/3/20
Valley Kondo Effect in Silicon Quantum Dots	Shiueyuan(Sean) Shiau	Department of Physics, University of Wisconsin, madison	2007/3/22
Growth and characterization of low dimensional magnetic systems	林文欽	Max-Plank Institute for microstructures	2007/3/22
Nanodimonds:Astrophysical implications and biological applications	張煥政	中研院原分所	2007/3/27
又軟又小的多面體、又怪又亂的物理課	阮俊人	中興大學物理學系	2007/4/3

演講題目	演講者	所屬機構	日期
Universal quantum spin decoherent dynamics in a spin bath	王道維	清華大學	2007/4/10
Visualizing the Interplay of Electron-lattice Interactions and High-TSuperconductivity at Atomic Scale	J. C. Seamus Davis	Cornell University	2007/4/12
Gravitational radiation near black holes and related horizon news functions	Yu-Huei Wu	University of Southampton	2007/4/13
Radio Science --- From Communication to Remote Sensing	劉兆漢	中央研究院	2007/4/17
MSSM Higgs sector with explicit CP violation	Eibun Senaha	National Central University	2007/4/20
Cosmic Acceleration:from the basics to the frontiers	Je-An Gu	National Center for Theoretical Sciences	2007/4/27
Dynamic micromechanical behavior of cohesive granular materials under compression and dispersion conditions	Kuo-yuan Chung	中央研究院物理研究所	2007/4/30
Recent results from BESII	Zheng Zhi-Peng	Institute of High Energy Physics, Beijing	2007/5/2
Storage and Retrieval of Light Pulses and Applications in Manipulation of Quantum Information	余怡德	清華大學物理系	2007/5/2
Microstructure of Polyelectrolytes in Salt Solutions Studied by Molecular Dynamics Simulations	Pai-Yi Hsiao	Department of Engineering and System Science, National Tsing Hua Univ	2007/5/7
精密測量與真空雙色性	倪維斗	清華大學物理系	2007/5/8

演講題目	演講者	所屬機構	日期
B →X_s photon transition at NNLL level	Artyom Hovhannisyan	National Taiwan University	2007/5/11
Nano-/Micro-technology for Linking Mechanics to Biochemistry in Molecular and Cellular Behavior	Philip LeDuc	Carnegie Mellon University	2007/5/11
Molecular Rheology of Polymer Solutions	Chi-Chung Hua	Dept. of Chemical Engineering, National Chung Cheng University	2007/5/14
探索真空	陳鎰鋒	中央大學物理系	2007/5/16
Ballistic aggregations, shadowing, and the growh of 3D nanostructures	Toh-Ming Lu	Rensselare Polytechinc Institute	2007/5/18
Spontaneous CP violating phase and the phase in the CKM matrix	Xiao-Gang He	Department of Physics, National Taiwan University	2007/5/25
The Array for Microwave Background Anisotropy	陳明堂	中央研究院天文研究所	2007/5/25
40年高效能計算生涯回顧	謝鐐璋	中央研究院物理研究所	2007/5/25
Scaling in Cosmology	方勵之	University of Arizona	2007/5/30
Polarizations aspects in the neutrino-electron scattering and neutrino magnetic moment	Ali U. Yilmazer	Ankara University, Turkey	2007/6/1
Second-order gauge-invariant perturbation theory and its application to cosmological perturbations	Kouji Nakamura	The Graduate University for Advanced Studies	2007/6/1

演講題目	演講者	所屬機構	日期
Computational Study of Laser Wake Field Accelerators	陳仕宏	中央大學物理系	2007/6/5
EB lithography for beyond 1 TB/inch2 density patterned media	Sumio Hosaka	Gunma University	2007/6/8
B-factory constraints on possible New Physics at the LHC	Steve Olsen	Hawaii University	2007/6/11
Quantam Size Effect in Nano Island Growth	Michael C. Tringides	Iowa State University	2007/6/11
Channel forming proteins from viruses: with Langevin across the membrane	Wolfgang Fischer	Yang-ming University	2007/6/11
LHC: Hot topics	張敬民	清華大學物理系	2007/6/12
Hydrodynamics in mixed biomembranes	Shigeyuki Komura	Tokyo Metropolitan University	2007/6/14
Precision Electroweak Physics at Hadron Colliders	Chien-Peng Yuan	Michigan State University	2007/6/22
巴西核果效應	廖思善	中興大學物理系	2007/6/26
Growth morphology control and their applications of carbon nanotubes	Li-Han Chen	University of California, San Diego	2007/7/3
Point Mutations Effects on Charge Transport Properties of the Tumor-Suppressor p53 Gene	施奇廷	東海大學物理系	2007/7/3

演講題目	演講者	所屬機構	日期
介紹說明法國研究署 ANR 的補助機制及國際合作計畫現況	Nakita Vodjdani	法國研究署(ANR)	2007/7/6
PEM Fuel Cells and Hydrogen: Challenges and Research Needs	Zhong-Sheng (Simon) Liu	Institute for Fuel Cell Innovation, National Research Council, Canada	2007/7/25
speicial seminar	Bennie Franklin Leon Ward	Department of Physics,Baylor University	2007/8/9
Deviations from the Harmonic Approximation due to electron-phonon interactions: An Extra Mode in alpha-Uranium.	Peter Riseborough	Temple University, USA	2007/8/20
Hercules Programme Introduction	Jean-Rene Regnard	歐盟Hercules訓練計劃辦公室	2007/9/6
Competing orders, quantum criticality and pseudogap phenomena in cuprate superconductors	Nai-Chang Yeh	California Institute of Technology	2007/9/12
Colloidal Transport by Interfacial Forces	葛煥章	台灣大學化工系	2007/9/17
Bacterial Flagella Motor: The Rotary Molecular Machine	Chien-jung Lo	University of Oxford	2007/9/18
大家來關心地球暖化，也想想我們的能源對策	鄭天佐	中央研究院物理所	2007/9/26
Convergent Iterative Solutions Schroedinger Equation for a Generalized Double Well Potential	李政道院士	諾貝爾獎得主	2007/9/29

演講題目	演講者	所屬機構	日期
Investigation in nanomagnetics : magnetization reversal, surface magnetic state, finite size effect and defect induced weak magnetism	Chin-Ping Chen	Department of Physics, Peiking University, China	2007/10/2
從馬吊到麻將--一種小玩意與大傳統交會的歷史因緣	陳熙遠	中研院歷史與語言研究所	2007/10/3
Technicolor in string theory	Takayuki Hirayama	National Taiwan Normal University	2007/10/12
2007 NCTS October Workshop on Critical Phenomena and Complex Systems	胡進錕	中央研究院物理所	2007/10/12
Biodegradable Magnetic Bioglass as Thermoseed for Tumor Hyperthermia	林峰輝	台大醫工所	2007/10/15
Nuclear Fusion as Clean Energy Source for Mankind	陳秋榮	成功大學電漿與太空科學中心	2007/10/17
SUSY R-parity violating contributions to the width differences for D - anti-D and B(d,s) - anti-B(d,s) systems	Shao-Long Chen	National Taiwan University	2007/10/19
Introduction to Spintronics	吳德和	雲林科技大學台灣自旋科技研究中心	2007/10/22
Complex Networks of Interacting Dynamical Systems: Cooperative Behavior, Regulation, and Modelling	禹東川	青島大學	2007/10/22
Recovery of superconductivity by interparticle interactions	李文獻	中央大學物理系	2007/10/24

演講題目	演講者	所屬機構	日期
Single-molecule physiology of protein machines	Kazuhiko Kinosita	早稻田大學	2007/10/26
conformation diffusion theories of ion channel gating	Goychuk Nizhny	Novgorod State Medical Academy	2007/10/29
奈米結構半導體的磁性	劉鏞	中央研究院物理所	2007/10/31
Walking on Water	David Hu	Courant Institute, New York University	2007/11/1
Electroweak symmetry breaking and cold dark matter from hidden sector technicolor interaction	Dong-Won Jung	National Central University	2007/11/2
Properties of Carbon Nanotubes (CNT) for Biomedical Applications	Fumio Watari	Hokkaido University	2007/11/6
Topological Susceptibility in Lattice QCD with Exact Chiral Symmetry	Ting-Wai Chiu	National Taiwan University	2007/11/7
Research on III-V and Ge nano-electronics for science and technology beyond Si CMOS	洪明輝	清華大學材料科學工程學系	2007/11/7
High Resolution X-ray Diffraction and Reflection Studies of Single Crystals, Surfaces and Thin Layers	Krishan Lal	國際科學數據委員會 (CODATA)	2007/11/8
Detection of Ultra High Energy Cosmic Neutrino in the South Pole	陳丕燊	台灣大學天文物理所	2007/11/14
Dimension of space-time	余海禮	中央研究院物理所	2007/11/16

演講題目	演講者	所屬機構	日期
Confinement Induced DNA Stretching and Ratchet-like Migration Confinement Induced DNA Stretching and Ratchet-like Migration under AC Electric Field	Wei-Chang Lo	中央研究院物理所	2007/11/19
Molecular Electronics and Sensors	Nongjian Tao	Arizona State University, Dept. EE	2007/11/22
Advances in global QCD analysis and impact on LHC phenomenology	賴宏亮	臺北市立教育大學	2007/11/23
Connecting the Galactic and Cosmological Scales: Dark Energy and the Cuspy-Core Problem	Achilles D. Speliotopoulos	Golden Gate University, USA	2007/11/26
中子星的發現	周翊	中央大學天文研究所	2007/11/28
New Physics in Neutrinoless Double Beta Decay Electron Angular Correlation	Dmitry Zhuridov	清華大學	2007/11/30
Unparticle Stuff	阮自強	國立清華大學	2007/12/3
Nucleon matrix elements on the lattice	Wolfram Schroers	台灣大學	2007/12/5
Supersolids on lattices	高英哲	台灣大學物理系	2007/12/5
String phenomenology at singularities	Stefan Groot Nibbelink	Heidelberg University	2007/12/11
Yang-Mills Gravity vs. Einstein Gravity	Jong-Ping Hsu	University of Massachusetts Dartmouth	2007/12/12

演講題目	演講者	所屬機構	日期
一個門外漢所認知的劇變理論	陳義裕	台灣大學	2007/12/12
phenomenology of scalar fermions in the MSSM	Arhrib Abdesslam	中央大學	2007/12/14
Role of Hemodynamic Forces on Vascular Cell-cell Interactions	Jeng-Jiann Chiu	國衛院	2007/12/17
超導/鐵磁邊記效應與介面電阻	李尚凡	中央研究院物理所	2007/12/17
Quantum mechanical approach to decoherence and relaxation generated by fluctuating environment	S. Gurvitz	Weizmann Institute, Israel	2007/12/19
Measuring cosmic gamma rays with the NCT telescope	張元翰	中央大學物理系	2007/12/19
Measuring Neutrino Masses and Dark Energy	杜蕙慈	UC Irvine	2007/12/20
The shadow of a hidden U(1) sector	張維甫	清華大學	2007/12/21
The Charged Higgs boson In NMSSM	晏啟樹	清華大學	2007/12/28

Visiting Scholars

中央研究院物理所九十六年度訪問學人表

(2007 年 1 月- 2007 年 12 月)

訪問學人	所屬機構	訪問期間
鄧立詩	土耳其 Middle East Tech. Univ.	95.09.01 - 96.07.31
梁宗嶽	美國Univ. of Delaware	95.12.01 - 96.01.13
阮錫超	中國原子能科學研究所	95.12.01 - 96.02.28
路家棋	中國　南京大學	95.12.04 - 96.09.15
尼斯瓦	印度 Indraprastha University	95.12.18 - 96.01.15
Edik Hayryan	Joint Institute for Nuclear Research	95.12.20 - 96.02.18
Brett J. Pokines	日本 Asian Office of aerospace Research and Development	95.12.29 - 96.01.06
Larry Ford	美國 Tufts University	95.12.29 - 96.01.13
Horace Yuan	美國 Northwestern University	96.01.01 - 96.01.05
何健民	美國 Wichita State Univ.	96.01.02 - 96.01.22
高鐘	美國 University of Oklahoma	96.01.02 - 96.01.31
Sugiyama Hiroaki	日本 KEK	96.01.05 - 96.02.02
Verdaguer, Enric	西班牙 Barcelona University	96.01.11 - 96.01.19
Albert Roura	西班牙 Barcelona University	96.01.11 - 96.01.19
蔡麗珠	台北科技大學	96.01.11 - 96.02.15
李大興	東華大學物理系	96.01.12 - 96.02.27
鍾國元	Case Western Reserve University	96.01.15 - 96.02.12
黎璧賢	中央大學物理系	96.01.15 - 96.02.14
曹慶堂	淡江大學物理系	96.01.15 - 96.02.28
王順金	中國 Sichuan University	96.01.16 - 96.01.18
湯兆倫	中正大學物理系	96.01.16 - 96.02.16
林宏一	台南大學	96.01.16 - 96.03.01
Olga V. Drugova	俄羅斯 Nizhny Novgorod State Medical Academy	96.01.19 - 96.03.18
蔡志申	國立台灣師範大學物理系	96.01.20 - 96.02.19
鄒忠毅	文化大學物理系	96.01.21 - 96.02.22

訪問學人	所屬機構	訪問期間
楊桂周	中原大學物理系	96.01.22 - 96.02.23
Ray Egerton	National Institute of Nanotechnology	96.02.06 - 96.02.13
伍法岳	美國 東北大學	96.02.24 - 96.03.11
Tsai, Jih chiang	美國 Northwestern University	96.02.27 - 96.03.13
Armen E. Allahverdyan	Yerevan Physics Instituute Armenia	96.02.28 - 96.03.30
朱梓忠	中國 廈門大學物理系	96.03.01 - 96.09.14
魏運成	加拿大多倫多大學物理系	96.03.22 - 96.04.15
Xerxes Ramyar Tata	美國 University of Hawaii at Manoa	96.03.27 - 96.04.04
Gary Shiu	美國 University of Wisconsin at Madison	96.03.31 - 96.04.05
Andre Gouvea	美國 Northwetern University	96.04..01 - 96.04.03
Luca Amendola	義大利 Institution INAF	96.04.01 - 96.04.03
吳育慧	英國 University of Southampton	96.04.01 - 96.06.30
Wiliam Allison	英國 University of Cambridge	96.04.09 - 96.04.16
喻純旭	中國 南開大學	96.05.01 - 96.08.30
李金	中國 中科院高能物理研究所	96.05.02 - 96.06.03
魏運成	加拿大多倫多大學物理系	96.05.14 - 96.06.18
高鐘	美國 University of Oklahoma	96.05.15 - 96.06.14
何健民	美國 Wichita State Univ.	96.05.17 - 96.06.22
Jacob Klein	德國 Oxford University	96.05.19 - 96.05.24
Shirley Suiling Chan	美國 Princeton University	96.05.20 - 96.05.24
Robert Hamilton Austin	美國 Princeton University	96.05.20 - 96.05.25
Meredith D. Betterton	美國 University of Colorado	96.05.20 - 96.05.27
C. L. Wong	美國 University of Illinois at Urbana	96.05.20 - 96.05.27
尼斯瓦	印度 Indraprastha University	96.05.23 - 96.07.22
崔瑩鎮	韓國 Inha University	96.05.24 - 96.05.27
Kouji Nakamura	日本 Dept. of Astronomical Science, Osawa Mitaka, Tokyo	96.05.24 - 96.06.02
馮壠壠	中科院紫金山天文台	96.05.26 - 96.06.02
Houjun Mo	美國 Univ. of Massachussetts	96.05.26 - 96.06.06

訪問學人	所屬機構	訪問期間
Ali Ulvi Yilmazer	Ankara University, 土耳其	96.05.28 - 96.06.05
Mehmet T. Zeyrek	Middle East Technical Univ. 土耳其	96.05.28 - 96.06.05
Meltem Serin	Middle East Technical Univ. 土耳其	96.05.28 - 96.06.05
Bhavti Sachdeva	印度 GGS Indraprastha Univ.	96.06..13 - 96.07.23
Nihavika Bhayana	印度 GGS Indraprastha Univ.	96.06..13 - 96.07.23
Mishra Narayan Chandra	印度 India Institute of Technology	96.06.01 - 96.07.15
郭永綱	東華大學物理系	96.06.01 - 96.09.01
Haijun Zhou	北京 中科院 理論物理研究所	96.06.03 - 96.06.04
Choon-Sun Kim	韓國 Yonsei University	96.06.06 - 99.06.13
鈴木厚人	高能加速器研究機構(KEK)	96.06.09 - 96.06.12
Michael C. Tringides	美國 Iowa State University	96.06.10 - 96.06.12
Kazuhiro Tobe	日本 Tohoku Univ	96.06.11 - 96.06.14
袁簡鵬	美國 Michigan State University	96.06.11 - 96.07.30
吳自玉	中國科學院	96.06.14 - 96.06.20
朱佩平	中國科學院	96.06.14 - 96.06.20
蔡志申	國立台灣師範大學物理系	96.06.20 - 96.09.19
Choon-Sun Kim	韓國 Yonsei University	96.06.21 - 96.06.25
沙阿金	Yerevan Physics Instituute Armenia	96.06.29 - 96.09.28
林宏一	台南大學	96.07.01 - 96.09.15
蔡麗珠	台北科技大學	96.07.01 - 96.09.15
鄒忠毅	文化大學物理系	96.07.01 - 96.09.15
湯兆倫	中正大學物理系	96.07.01 - 96.09.15
曹慶堂	淡江大學物理系	96.07.01 - 96.09.15
邱雅萍	中山大學物理系	96.07.01 - 96.09.15
王昌仁	東海大學物理系	96.07.01 - 96.09.15
李大興	東華大學物理系	96.07.01 - 96.09.16
黎璧賢	中央大學物理系	96.07.01 - 96.09.30
張經霖	淡江大學物理系	96.07.01 - 96.09.30

訪問學人	所屬機構	訪問期間
譚言正	嘉義大學應用物理系	96.07.01 - 96.10.01
楊桂周	中原大學物理系	96.07.11 - 96.09.10
Avinash C. Sharma	印度 GGS Indraprastha Univ.	96.07.13 - 96.07.18
Anders Sandvik	美國 Boston Univ.	96.08.01 - 96.11.17
Eytan Domany	以色列 Weizmann Institute of Science	96.08.05 - 96.08.12
Mark C. Williams	美國 東北大學	96.08.05 - 96.08.12
Bennie Franklin Leon Ward	美國 Baylor University Texas	96.08.08 - 96.08.10
魏運成	加拿大多倫多大學物理系	96.08.08 - 96.09.07
梁宗嶽	美國Univ. of Delaware	96.08.12 - 96.08.26
梁宗嶽	美國 Univ. of Delaware	96.08.18 - 96.08.22
李政道	美國哥倫比亞大學物理系	96.09.27 - 96.09.30
魏運成	加拿大 多倫多大學	96.09.30 - 96.10.08
謝鐐暲	中央研究院物理所	96.09.30 - 96.11.04
Ramesh Verma	印度 Punjabi University	96.10.02 - 96.12.30
張綿福	美國 Duke Univ.	96.10.04 - 96.10.09
Bernard Brooks	美國 National Institutes of Health , National Heart, Lung, and Blood Institute	96.10.11 - 96.10.16
Brigita Urbanc	美國 Boston Univ.	96.10.11 - 96.10.16
Kensei Kobayashi	日本 Yokohama National Univ.	96.10.12 - 96.10.15
Maciej Dlugosz	波蘭 University of Warsaw	96.10.12 - 96.10.19
藍志成	加拿大 Univ. of British Columbia & McGill Univ.	96.10.20 - 96.10.28
鄭天佐	本所諮詢委員	96.10.24 - 96.11.24
Igor A. Goychuk	德國 IOP Univ. of Augsburg	96.10.28 - 96.11.03
David Chien	美國 Dept of Mathematics CSU	96.10.28 - 97.01.10
Shmuel Gurvitz	以色列 Weizmann Institute of Science	96.11.01 - 96.12.31
Nongjian Tao	美國 Arizona State Univ.	96.11.21 - 96.11.24
Changrim Ahn	韓國 Ewha Womans University	96.11.21 - 96.11.26
Peter Silvestrov	德國 Ruhr University Bochum	96.11.25 - 96.12.22
沙阿金	亞美尼亞 Yerevan Physics Institute	96.11.28 - 96.12.29

訪 問 學 人	所 屬 機 構	訪 問 期 間
Andrei Varlamov	義大利 Italian National Institute of Condensed Matter Physics	96.12.01 - 96.12.31
Irina V. Mukhina	Nizny Novgorod State Univ.	96.12.03 - 96.12.06
Zbigniew Romuald Struzik	日本 The Univ. of Tokyo	96.12.05 - 96.12.15
Pradeep Kumar	美國 Rockefeller University	96.12.06 - 96.12.17
Nickolay Izmailian	亞美尼亞 Yerevan Physics Institute	96.12.06 - 97.01.05
Piotr E. Marszalek	美國 Duke University	96.12.07 - 96.12.15
Stefan Groot Nibbelink	德國 Univ. of Heidelberg, Inst. Lf Theoretical Physics	96.12.08 - 96.12.17
Alexandder Gurevich	美國 National High Magnetic Field Laboratory	96.12.12 - 97.01.12
梁宗嶽	美國 Univ. of Delaware	96.12.13 - 96.12.14
Boris Altshuler	美國 Columbia Univ.	96.12.15 - 96.12.19
歐陽頎	中國　北京大學	96.12.19 - 96.01.26
Lawrence H. Ford	美國 Tufts Univ.	96.12.26 - 97.01.13