School of Physics at Nanjing University

NANJING UNIVERSITY, CHINA

NANJING UNIVERSITY

Nanjing University (NJU) is a national comprehensive university located in Nanjing, an ancient capital of China. It is one of the best and most selective universities in China and dates back to 1902, when it was known as Sanjiang Normal School. Today's NJU consists of three beautiful campuses; Gulou, Pukou, and Xianlin. As a top university in China, it boasts advanced teaching and research facilities. Many famous scientists and scholars have studied or worked here. With its multi-disciplinary programs and distinguished faculty, NJU leads the institutions of higher learning in China. Statistics show that since 1992, the number of research papers by NJU faculty and students in the Science Citation Index (SCI) has been ranked as the first among universities in mainland China for seven consecutive years. So did the number of the articles cited by international academic circles for eight years. NJU has made remarkable achievements in student education. Its current student number totals around 31,304 (with 14,188 undergraduate and 15,667 graduate students). Students at NJU have been demonstrating their exceptional abilities in various competitions inside and outside of China.

HISTORY OF THE SCHOOL OF PHYSICS

Physics at Nanjing University arises from the Division of Physics and Chemistry, which was founded in 1915 when NJU was known as Nanjing Higher Normal School. It was later renamed the Department of Physics in 1920, and is one of the earliest physics departments in China. With the development of physical science at Nanjing University, the Department of Information Physics, and the Department of Material Science and Engineering were derived from the Department of Physics in 1984 and 1994, respectively. Based on these three departments, the School of Physics, the School of Engineering and Applied Sciences, and the School of Electronic Science and Engineering were founded in 2009.

Over the past hundred years, the School of Physics at

Fig. 1: (a): Main gate at the Gulou campus of Nanjing University. (b): Main gate at the Xianlin campus of Nanjing University.

Fig. 2: Physics Building at Nanjing University.

Nanjing University has contributed significantly to the scientific developments and the modernization of the country, and has itself become one of the best physics departments in China. NJU Physics was ranked number one in China in 2007 and 2012 by the Academic & Graduate Education Development Center of the Ministry of Education of China. In this new era, the School of Physics aspires to become one of the most highly ranked physics departments in the world. We extend our warm welcome to distinguished scholars and outstanding young talent from China and beyond, to join our efforts.

FACULTY AND DIVISIONS

Currently, the school has 215 faculty members and supporting staff, including 91 professors and 50 associate professors. Among the faculty members, there are ten members of the Chinese Academy of Sciences, two Qianren (1000 Talents Program) Scholars, 17 Changjiang Distinguished Professors of the Ministry of Education of China, 22 winners of the National Outstanding Young Investigator Prize, which is awarded by the National Science Foundation of China, eight Qingnin Qianren (1000 Young Talents Program) Scholars, nine chief scientists of the National Basic Research Program (973 Program), four APS Fellows, and two OSA Fellows.

The School of Physics now has four departments and one teaching center. They are the Department of Modern Physics; the Department of Physics; the Department of Photonics and Quantum Optics; the Department of Acoustic Science and Engineering; and the Center of Physical Teaching & Experiments.

PHYSICS EDUCATION

The school offers Bachelor of Science degrees in physics, applied physics and acoustics, and advanced programs leading to master's and PhD degrees in theoretical physics; condensed matter physics; acoustics; optics, atomic and molecular physics; computation physics; particle physics and nuclear physics; and biophysics and soft matter. It provides more than 80 core and optional courses, more than 100 physics experiments and dozens of research training programs. The school has a tradition of excellent teaching in both undergraduate and graduate courses. It is the National Training Base of the Basic Science of Physics, its experimental center is the National Experimental Teaching Demonstration Center and it is now supported by the National Physics Undergraduate Top-Notch Training Plan. The school has won three first class National Teaching Achievement Awards in Higher Education.

Now, the school has over 800 undergraduate students and 700 graduate students (where more than half are PhD candidates). More than 70% of graduates pursue both a master's degree and a Ph.D degree. In recent years, a dozen graduates have entered world famous universities to continue their studies, and nine doctors who have graduated from the school have been the authors of "National Outstanding Doctoral Thesis".

RESEARCH AND LABORATORIES

Physics at NJU includes a wide variety of disciplines and specializations, ranging from practical, technology-driven fields to the study of fundamental physics and the structure of the universe. The major fields of study include condensed matter; atomic, molecular, and optical physics; acoustics and its applications; and nuclear, particle and high energy physics (cosmology). There are also some fields that cross into other disciplines, such as computational physics, biophysics and soft matter.

Since 2002, The School of Physics at NJU won one National First Award for Natural Science and eight National Second Awards for Natural Science. The school has received research funding of over 100 million RMB per year for the past five years, and is well-represented in international journals (SCI). Every year it has over 450 publications, and among them more than ten research papers have been published in internationally renowned professional journals, including Phys. Rev. Lett, and Na-

Fig. 3: Building of Nanjing National Laboratory for Microstructures.

ture's subsidiary periodicals such as Nature Physics, Nature Materials, Nature Photonics, etc.

The National Laboratory of Solid State Microstructures (NLSSM) was founded in 1984, and was one of the first state key laboratories founded in China. As a multidisciplinary science and engineering research center, the goals of NLSSM are to design and fabricate new artificial microstructured materials by designing and tailoring the energy band structures in reciprocal space, to discover new macroscopic and microscopic quantum effects and principles, to develop new theories and methodologies based on quantum physics, and to endeavor to meet the scientific challenges and technological requirements encountered in the post-Moore era and the post-petroleum era. In all of the assessments for state key laboratories, NLSSM always received an "excellent laboratory" assessment. The journal Nature wrote that NLSSM was one of the institutes in the Pacific Rim of Asia, excluding Japan, that approached world-class standards in research in 1997 [Nature 389, 113 (1997)]. The laboratory sincerely welcomes international cooperation in areas of material design, quantum physics, nanooptics and plasmonics, clean energy and environment-related studies [http://vlssm.nju.edu.cn].

Physics at NJU has taken the lead in founding in 2014 the Collaborative Innovation Center of Advanced Microstructures (CICAM), which was established under the 2011 plan by the Ministry of Education of China, in partnership with the physics departments at Fudan University, Shanghai Jiao Tong University, Zhejiang University, the University of Science and Technology of China, and the Hefei Institute of Physical Science of the Chinese Academy of Science.

In addition, it has the following laboratories & interdisciplinary institutes:

- Nanjing National Laboratory for Microstructures (under construction)
- Ministry Key Laboratory of Modern Acoustics
- Provincial Key Laboratory for Nanotechnology
- Center for Eco-Materials and Renewable Energy Research
- Joint Center for Particle, Nuclear Physics and Cosmology with Purple Mountain Observatory, Chinese Academy of Sciences
- Center for Superconducting Physics and Materials
- Institute of Solid State Physics
- Institute of Applied Physics
- Institute of Biophysics

INTERNATIONAL EXCHANGE

The School of Physics has established academic exchange and research cooperation with over 40 institutions in nearly 20 countries and has invited internationally-based faculty members and scholars to the school to give lectures or to conduct research here. Now our exchange program has been extended to foreign students.