

# State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiatong University

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The State Key Laboratory of Electrical Insulation and Power Equipment (SKLEIPE) at Xi'an Jiatong University was initially approved by the National Planning Commission in 1989 as a developing avenue of the key academic disciplines funded by the World Bank (WB) loans. It was formally established in 1991 and opened to the public sector during October 1995. At present the laboratory is managed by the Director, Professor Jianhua Wang, and the Director of the Academic Committee, Professor Qingquan Lei who is a member of the Chinese Academy of Engineering.

The laboratory is supported by two state key academic disciplines namely “**High Voltage and Electrical Insulation Technique**” and “**Electrical Machine and Electrical Apparatus.**” These two disciplines include two additional sub-disciplines comprising of “*Power Electronics and Electrical Drive*” and “*Electrical Theory and New Techniques.*” The SKLEIPE is located in a new building of 5,600 square meters. It possesses advanced instruments and power sources for studies on dielectric properties, discharge characteristic, insulating materials, insulation structures, chemical and physical analysis, large-scale simulation and signal measurement and analysis etc., totally with a present market value of about \$3,600,000. This facility is nationally competitive and capable of providing precise and systematic research tools to the prospective investigators. Now 32 professors, more than 10 guest researchers and a large number of Doctoral and Master’s candidates are working in SKLEIPE. The main research fields include:

dielectric property and breakdown strength of insulating system, on-line diagnosis and condition-based management, arc theory and gas insulation techniques, functional materials and new insulation techniques, and development in the theory and techniques of power equipment etc.



Fig. 1 The building for SKLEIPE.

Since the installation of the laboratory it has conducted outstanding research programs and acquired remarkable achievements via receiving research support from the State and Local Governments. These activities are focusing on global competitiveness and effectiveness in the frontier of electrical insulation and power equipment in addition to the academic and general research areas concerning with key scientific problems in civil, economic, and national defense.



Fig. 2 The high-voltage hall on the ground floor.

Since 1997 this laboratory has won 2 National Awards and 10 Local Government Awards in conducting scientific research including 3 National Awards in teaching and generating textbook. It has published over 900 papers and 11 monographs and textbooks. Also it has hosted and conducted 4 International Conferences.

Approximately \$100 million worth of production value support have been provided to the manufacturing sectors for commercial applications via scientific and engineering technology transfer from this laboratory.



Fig. 3 The 3rd floor for the experimental instruments of physics/chemistry analysis.

Maintaining the policy of “Openness, Flexibility, Alliance, and Competitiveness”, this laboratory has become a world-known source and base for remarkable contributions in the scientific research, teaching, academic communion, and technology transfer to the commercial arena for applications in the general field of electric power development in China.

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