

Physics in Korea

Overview of the Korean Physical Society

- ❖ Founded in 1952
- ❖ 12,378 members
- ❖ 11 divisions, 7 regional chapters, 17 committees
- ❖ Semiannual meetings
 - April and October
 - Approximately 1,000 papers each time
- ❖ 4 periodicals published
- ❖ Korean Physics Olympiad
 - Competition for middle school & high school students
 - 6,800 participants in 2009

KPS Journals



Expanding Frontiers



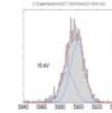
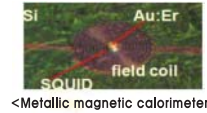
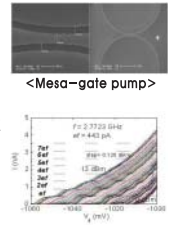
External Cooperation

- ❖ Alliance with Other Societies in Korea
 - Federation of Basic Science Societies
 - Federation of Physics-Related Societies
- ❖ International Cooperation
 - Physical Society of Japan (1986)
 - Japan Society of Applied Physics (1987)
 - German Physical Society (1991)
 - American Physical Society (1993)
 - Australian Institute of Physics (1994)
 - Chinese Physical Society (1995)
 - Institute of Physics (1997)
 - Association of American Physics Teachers(2001)
 - Indonesian Physical Society(2005)
 - Myanmar Physical Society(2005)
 - Vietnamese Physical Society(2005)

Physics Research Institutions in Korea

Korea Research Institute of Standards and Science (KRISS)

- ❖ Established in 1975
- ❖ Mission of KRISS
 - Establishment and Maintenance of National Measurement Standards
 - R&D on Metrology
 - Dissemination of NMS
- ❖ Next generation measurement standards
 - Quantum current standards(SAW-induced electron pump)
 - Objective: 1 nA, uncertainty of 10⁻⁸
 - Frequency standards based on an optical lattice clock
 - Objective: uncertainty below 10⁻¹⁷
 - Noise thermometry
 - Shot noise thermometry, Johnson noise thermometry
 - Quantum-based force standards
 - Objective: sub-pN
- ❖ Nano-quantum based extreme measurement technologies
 - Generation and entanglement of single photon
 - Objective: 10 qubits quantum computing
 - High-resolution spectroscopy with low-temperature detectors
 - Objective: energy resolution of 1 eV@6 keV
 - Nanoscale thermal energy transport and conversion
 - Nanoelectromechanical systems for quantum detection
 - Objective: GHz resonating for quantum detection



Pohang Light Source (PLS) PLS Beamlines

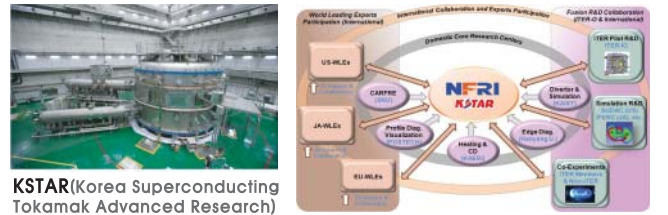


Pohang Light Source

- ❖ Construction Budget(1988~1994)
 - -US \$200 million
- ❖ Operating Budget(2008)
 - Government \$18.5 M+Endowment&other \$5.2M
- ❖ User Statistics(2007)

	University	R&D Lab	Industry	Foreign	Total
Experiments	704	70	48	15	837
Institutes	45	11	10	5	71
Users	2,199	207	103	44	2,553

National Fusion Research Institute (NFRI)



KSTAR(Korea Superconducting Tokamak Advanced Research)

Korea Institute for Advanced Study (KIAS)

- ❖ Founded in 1996
- ❖ Mission
 - Research in theoretical basic sciences
 - Training young scientists
 - Leading Korea's basic sciences
- ❖ Activities
 - Training research fellows through research activities
 - Inviting visiting scholars and hosting international conferences and workshops

Korea Basic Science Institute (KBSI)

- ❖ Mission
 - Perform R&D support and joint research to promote basic science
- ❖ State-of-the-Art Facilities at KBSI
 - 30 Researchers
 - 40 Technicians
 - 30 Administrators

Annual Budget : \$70 million

