

Memorandum of Understanding Between

Nanjing University

Argonne National Laboratory 9700 South Cass Avenue, Bldg 208 Argonne, IL 60439

Physical Sciences and Engineering

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and

UChicago Argonne, LLC, operator of Argonne National Laboratory

Nanjing University in the People's Republic of China (hereinafter Nanjing) and UChicago Argonne, operator of Argonne National Laboratory in the United States of America (hereinafter Argonne), collectively herein the "Participants":

Desiring to facilitate cooperation between Nanjing's Center for Superconducting Physics and Materials and Argonne's Superconductivity & Magnetism Group, Materials Science Division,

Have reached the following understanding:

1. Objective: The objective of this Memorandum of Understanding (MOU) is to establish a general framework of potential collaboration by Nanjing and Argonne regarding novel pairing mechanism of iron-based and other related novel superconductors, vortex physics, critical current density, and potential applications of superconductors, and to increase cooperation between the institutions in general.

2. Background: Nanjing has a newly established Center for Superconducting Physics and Materials with an extensive set of facilities for materials synthesis and characterization. In addition, Nanjing has facilities for investigation of novel pairing symmetry in superconductors, including facilities for investigating transport, thermal power, low temperature specific heat, angle resolved specific heat, sensitive magnetic force microscopy (MFM) and tunneling spectrum.

3. The Superconductivity and Magnetism Group in the Materials Science Division (MSD) at Argonne operates a wide spectrum of state-of-the-art characterization tools including magneto-resistance, scanning probe, and pulsed current measurements in a triple-axis vector magnet, a micro-calorimeter operating at LHe3 temperatures and sophisticated low-temperature magneto optics and thermal imaging devices. In addition, MSD has access to heavy ion and proton-irradiation facilities for introducing controlled pinning sites into superconductors and has strong expertise in the study of vortex physics in high temperature superconductors.

4. The facilities of both Participants are highly complementary. Both institutions are interested in the novel pairing mechanism of iron-based and other related novel superconductors, critical current density and potential applications. 5. Cooperation: The forms of cooperation under this MOU may include exchange of information that the Participants have a right to disclose on an unrestricted and non-proprietary basis, organization of technical meetings, symposia or training courses, the exchange of samples, and hosting of short-term visits of researchers. Specific cooperation activities and related commitments should be detailed in appropriate written contractual agreement(s), are subject to the availability of funds and all appropriate required approvals, including approvals from applicable government authorities of the Participants' respective countries.

6. Each Participant should designate one or more Lead Coordinators, to serve as its principal representative(s) for all activities conducted under this MOU, including identifying areas of cooperation, providing rapid response concerning its organization's interest in specific areas of cooperation, coordinating cooperation between the Participants, and identifying available resources (including funding) for collaborative activities under this MOU. The initial Lead Coordinator for Argonne is Wai-Kwong Kwok. The initial Lead Coordinator for Nanjing is Hai-Hu Wen.

7. General: This MOU does not create any legally binding obligations between the Participants. The conduct of cooperative activities contemplated by this MOU is subject to the availability of funding, personnel, and other resources. Each Participant should conduct the cooperation under this MOU in accordance with applicable laws and regulations to which it is subject, and international agreements to which its Government is party. Each Participant is responsible for the costs it incurs in participating in cooperative activities under this MOU.

8. Cooperative activities under this MOU may commence upon signature by the Participants and continue for a 5-year period unless discontinued. The Participants may discontinue this MOU at any time in writing. A Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least ninety (90) days written notice to the other Participant. This MOU may be modified in writing by mutual consent of the Participants, and may be extended for additional periods.

Signed in duplicate.

Nanjing University

UChicago Argonne, LLC **Operator of Argonne National Laboratory**

1 he Name: Hai-Hu Wen Title: Center Director Date: 28 Feb. 2013

By: + Bh -0

Name: Peter Littlewood

Title: Assoc. Las Director PEE Date: 6th Nova2012