

MEMORANDUM OF UNDERSTANDING

between

UCHICAGO ARGONNE, LLC,
OPERATOR OF ARGONNE NATIONAL LABORATORY

and

TECHNOLOGICAL INSTITUTE FOR SUPERHARD AND NOVEL CARBON MATERIALS
FOR COOPERATION ON HIGH QUALITY DIAMOND CRYSTALS FOR RESEARCH

UChicago Argonne, LLC, operator of Argonne National Laboratory (Argonne) under Prime Contract No. DE-AC02-06CH11357 with the U.S. Department of Energy, and the Federal State Institution "Technological Institute for Superhard and Novel Carbon Materials" (TISNCM) of the Ministry of Education and Science of the Russian Federation, Federal Agency for Science and Innovations, Russian Federation, collectively herein the "Participants",

SHARING an interest in collaborating to advance the technical and cost performance of high quality diamonds crystals in Synchrotron Radiation (SR) and X-ray Free Electron Laser facilities (XFEL),

HAVE REACHED THE FOLLOWING UNDERSTANDING:

I. OBJECTIVE

The Participants intend to work together to develop the mechanisms and processes to promote collaborative efforts for research and development (R&D) on technologies and assessments of technology options and economics related to high quality diamonds crystals in SR and XFEL facilities as a source of high average and peak brightness, extremely narrow bandwidth X-ray beams.

II. FORMS OF COOPERATION

Cooperation may include, but is not limited to:

1. Exchange of samples and materials subject to the Participants' compliance with the laws of their respective countries; and
2. Exchange of published scientific and technical information, publications, and reports.

III. POINTS OF CONTACT

Each Participant should designate one or more Lead Coordinators to serve as its principal representative(s) for all activities conducted under this Memorandum of Understanding (MOU),

including identifying areas of cooperation, coordinating cooperation between the Participants, and identifying available resources (including funding) for potential collaborative activities under this MOU.

IV. GENERAL CONSIDERATIONS

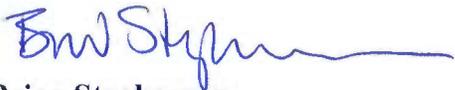
1. This MOU does not create any legally binding obligations between the Participants.
2. The conduct of cooperative activities contemplated by this MOU is subject to the availability of funding, personnel, and other resources.
3. Each Participant should conduct the cooperation under this MOU in accordance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

V. COMMENCEMENT, MODIFICATION AND DISCONTINUATION

1. Cooperative activities under this MOU may commence upon signature by the Participants and continue for a 5-year period unless discontinued in accordance with paragraph 2 of this Section.
2. 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.
3. This MOU may be modified in writing by mutual consent of the Participants, and may be extended for additional periods.

Signed in duplicate.

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


G. Brian Stephenson
Associate Laboratory Director
Photon Sciences
Title

January 30, 2013
Date

Argonne National Laboratory
Place

**For Technological Institute for
Superhard and Novel Carbon Materials:**


Vladimir D. Blank
Professor, Director
Title

19.02.2013
Date

Moscow, t. Troitsk
Place