



NEWSLETTER

of the International Consortium “Development of High-Power Terahertz Science & Technology”

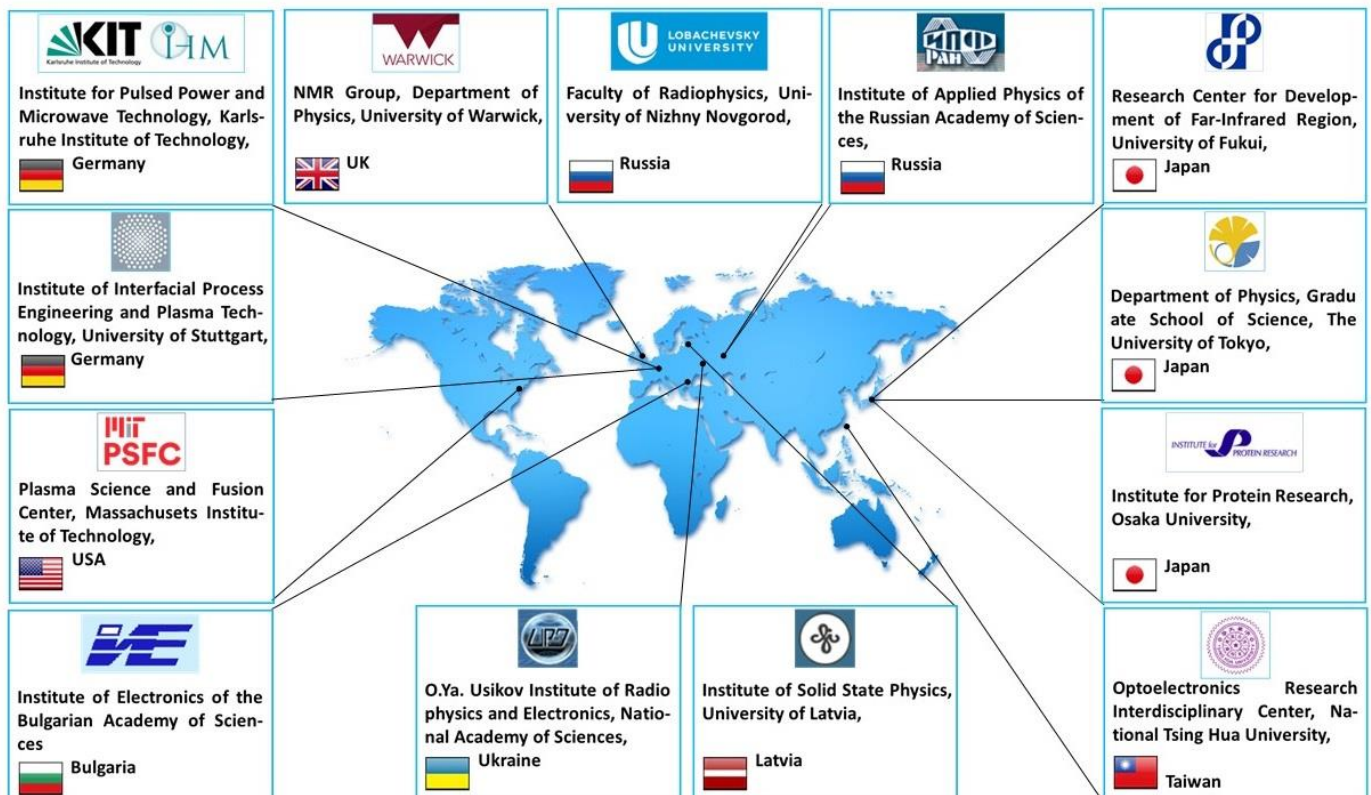
October 2015

№ 1

LEADING NEWS

We are glad to announce that after an extended period of detailed discussions, considerations and negotiations the final version of the Agreement for establishing an International Consortium for “**Development of High-Power Terahertz Science and Technology**” was signed by all participating institutions in October, 2015.

The International Consortium includes 13 institutions from 9 countries around the world as shown in the map below. It has been organized by the Research Center for Development of Far-Infrared Region at the University of Fukui (FIR UF), Japan, which serves as a facilitator and a managing organization of the Consortium.



The International Consortium will maintain a website (visit: [http://fir.u-fukui.ac.jp/Website Consortium](http://fir.u-fukui.ac.jp/Website_Consortium)) and will issue periodically a Newsletter. We plan to update regularly the information presented in the website and the Newsletter. Any contribution to both media from the participating institutions would be highly appreciated. It is believed that through the joint efforts of all parties involved they will become valuable sources of information about the research projects and other activities carried out by the Consortium.

WELCOME ADDRESS



NOWADAYS, we are witnessing a remarkable progress in the development of the terahertz science and technology, which is termed by many as a revolution that is taking place in a region of the electromagnetic spectrum situated between microwaves and light and thus between electronics and photonics. Till recently, and occasionally even today this region is called “a THz gap”. In the recent years, however, many novel high-power radiation sources that operate in the sub-THz and the THz frequency bands have been developed. Among them are the gyrotrons – the most powerful sources of coherent radiation in a CW (continuous wave) regime. They have opened the road to many new applications in both the fundamental physical research and the technologies. Some remarkable examples are advanced spectroscopic techniques (e.g. NMR-DNP, XDMR, ESR, measurement of the HFS of positronium), novel medical technologies, detection of concealed radioactive materials, treatment and analysis of various materials *etc.*

The FIR UF has always been an active promoter of the international collaboration in all these rapidly developing fields. Following the success of the previous International Consortium called “Promoting international collaboration for development and application of sub-millimeter gyrotrons” we decided to renew it in an extended format. The new International Consortium for “Development of High-Power Terahertz Science and Technology” includes 13 institutions from 9

countries from all over the world. The activities of the Consortium will be presented in a website and in a Newsletter, which will be published regularly.

We believe that in the framework of such wide collaboration the participating institutions will contribute significantly for the further advancement of the high-power terahertz science and technology.

Welcoming all members of the Consortium we wish them many successful research projects and remarkable results.

Professor M. Tani
Director of FIR UF
Facilitator of the Consortium

Professor T. Idehara
Supervisor of International
Cooperation, FIR UF

CURRENT WINNER OF THE KENNETH J BUTTON PRIZE

KENNETH J BUTTON AWARD WINNERS

Current Winner



2016

**Professor Toshitaka Idehara,
University of Fukui, Japan**

“for outstanding contributions to the development of high power THz radiation sources (harmonic gyrotrons) and their applications to high power THz spectroscopy.”

Previous Winners

2015 P. Goy	2006 X C Shen	1997 B Lax - Special bronze medal
2014 X C Zhang	2005 N C Luhmann, Jr	1997 P L Richards
2013 K Sakai	2004 M F Kimmitt	1996 M I Petelin
2012 G Nusinovich	2003 S G Liu	1995 R J Temkin
2011 D Grischkowsky	2002 A Hadni	1994 F K Kneubuhl
2010 D B Rutledge	2001 K R Chu	1993 J-I Nishizawa
2009 F Keilmann	2000 M Thumm	1992 D H Martin
2008 A Litvak	1999 A J Sievers	1991 M von Ortenberg
2007 T J Parker	1998 K Mizuno	

Courtesy to the source: <http://www.irmmw-thz.org/kjb-winners>

DISCUSSION

Our mission and goals formulated in the Agreement for establishing the International Consortium for “Development of High-Power Terahertz Science and Technology” are represented symbolically in the logo of our organization (see the front page of the Newsletter). In it, the V-shaped element symbolizes the region of the electromagnetic spectrum, which is still referred to as a “THz gap”. This “no man’s land” is situated between the microwaves and light and thus is a cliff that separates two adjacent brinks, namely electronics and photonics (see the right and the left elements of the logo). We consider both the THz science and technology as foundations (bottom semi-circle) for building a bridge (upper semi-circle of the logo) over the THz region. Our focus is just in the middle of this region, i.e. around 1 THz. Symbolically, this target is represented by the central element.

We intend to place the logo of the International Consortium on the website. Other symbols are the logos and national flags of the participating institutions shown around the world map (see the first page).

We would like to receive a feedback from the members concerning the mentioned graphical symbols. Please examine and check them carefully. Any suggestion for their correction or improvement is welcome and would be highly appreciated.

ANNOUNCEMENT

The FIR UF is currently seeking an excellent candidate for a postdoctoral fellow position in the field of high-power THz science and technology, which will be opened from the beginning of the next academic year (April, 2016). For more details please contact:

Professor Toshitaka Idehara
Supervisor of International Cooperation
idehara@fir.u-fukui.ac.jp

EDITORIAL POLICY OF THE NEWSLETTER

In the following issues of the Newsletter we intend to extend its scope and plan to include the following topics:

- ❑ Research highlights presenting new projects pursued by the members of the Consortium.
- ❑ News from the participating institutions.
- ❑ Information about conferences, symposia, workshops, seminars.
- ❑ Programs and frameworks for exchange of visits and mobility of researchers.
- ❑ Annotations of books, conference proceedings, software and Internet resources. A list of the recent scientific publications and conference reports will be available from the corresponding page of the website of the Consortium.
- ❑ Information and announcements about awards and nominations.
- ❑ Short presentations of laboratories and research groups belonging to the participating institutions.

We encourage the researchers from the member institutions to contribute to the Newsletter with materials, ideas and suggestions. We believe that together we can make it a helpful and interesting source of information about our collaboration.

FOR CONTACTS

Please submit your contributions to the Newsletter as well as requests for information to:

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