



Superconductivity Centennial Events Worldwide

November 30, 2010 (HE54, updated November 1, 2011). In year 2011, the worldwide superconductivity community has been the 100 anniversary of the discovery of superconductivity by Heike Kamerling Onnes and his collaborators in Leiden, The Netherlands. This discovery was made on April 8, 1911. Many special events of different kind were organized. Our purpose has been to provide hereby a concise guide through these events worldwide on which we could obtain information. You can find below links to web pages where such events were announced (some past event links could be already inactive). For the convenience of our readers, this guide has been periodically updated to represent the actual status of accessible information. Major events are presented in chronological order. *Regional events planned in different countries are listed last.* This is the last update. This guide will be no longer accessible after December 31, 2011. In 2012 some additional celebrations may be organized. At this point we are only aware of tentative plans. Once specific information becomes available, it will be announced in our [Announcements](#) section.

First Quarter of 2011

- **An opening salvo has been given in September 2010 by “Physics Today”** through the well-timed publication of the historical paper on “The Discovery of Superconductivity” by Dirk van Delft and Peter Kes, both of Leiden. As this paper can be of interest to a broad readership, we make it accessible-free-of-charge in Issue 15 of ESNF; we thank “Physics Today” (AIP) for the permission to re-publish.
- **In January 2011, the Institute of Physics (IOP, UK) journal “Superconductor Science and Technology”** announced the list of 100 superconductivity papers available free-of-charge until the end of the centennial year: [visit this IOP webpage](#).
- **The German Physical Society (DPG) and the American Physical Society (APS)** organized the first two major centennial events in 2011. Different sections of DPG held their annual Spring Meeting, the biggest and most international European meeting of this type, in various German cities during the month of March. In 2011, the Section of Condensed Matter (SKM) co-organized the meeting in Dresden, Saxony, from March 13th to 18th, see <http://dresden11.dpg-tagungen.de/index.html?lang=en&>. It featured two centennial festive sessions (in German “Festsitzungen”):
 - Tuesday, March 15th, “50 Years of Flux Quantization”, and
 - Thursday, March 17th, “100 Years of Superconductivity”.Topics of talks and the confirmed speakers are listed [here](#). Furthermore, three symposia related to quantum systems and quantum physics involved superconductivity more or less directly. Information on these symposia is given [here](#). The regular DPG program included two plenary talks on superconductivity. We list these together with the two festive sessions (use the link above).
- **The annual APS March Meeting** was held from March 21st to 25th, 2011, in Dallas, Texas, USA, see: <http://www.aps.org/meetings/march/index.cfm>. Three Superconductivity Centennial Sessions were planned:
 - Monday, March 21st, “Historical Perspectives from Discovery by Kamelingh Onnes”
 - Tuesday, March 22nd, “Nobel Perspectives on 100 Years of Superconductivity”,
 - Wednesday, March 23rd, “Superconductivity Centennial: Future Research Opportunities”.The invited speakers and their talks are listed [here](#). The first session was organized by the APS “Forum on History of Physics” (FHP) the following two by the Divisions of Condensed Matter Physics and Materials Physics (DCMP and DMP).

Furthermore, the **APS-FIAP (Forum on Industrial and Applied Physics)** organized an Industrial Physics Forum (IPF) on the theme “Industrial Applications of Superconductivity: Current Status and Future Prospects” with the following sessions:

- Sunday, March 20th, “History, Current Status, Future Prospects”
- Sunday, March 20th, “Large-scale Applications”
- Monday, March 21st, “Small-scale Applications”
- Monday, March 21st, “Frontiers in Physics”.

Speakers invited to IPF and titles of their talks are listed [here](#).

Second Quarter of 2011

- **The Institute of Electrical and Electronic Engineers (IEEE)** has approved an IEEE Milestone in Electrical Engineering and Computing to commemorate the 100th anniversary of the discovery of superconductivity. The IEEE milestone plaque (in English), and another one (in Dutch) sponsored by the Philips Research Laboratories (their first director was one of Onnes’s collaborators involved in the discovery), will be mounted on a wall near the entrance hall of the Kamerling Onnes Building of the Leiden University, Leiden, The Netherlands, where the discovery was made. Both were dedicated on 8 April 2011, the precise 100th anniversary of the discovery. In conjunction with this dedication, a Workshop on the “100th Anniversary of Superconductivity: Hot Topics and Future Directions” were held in Leiden, April 4 to 8, see <http://www.lorentzcenter.nl/lc/web/2011/438/extra2.php3?wsid=438>. Also a one-day Symposium commemorating Kamerling Onnes was held on April 8th, in conjunction with the dedication of plaques. We plan to devote a separate Highlight to that Symposium and possibly publish the two historical talks given there.
- **At the same time as the Leiden Workshop** (April 4th to 8th), superconductivity was highlighted at the German Hannover Fair 2011. In the pavilion No. 13 devoted to energy, there was a superconductivity exhibit area, stand D60, called the “SuperConducting City” (<http://www.hannovermesse.de/scc>). It featured new concepts, market-relevant processes and products utilizing superconductivity in fields such as drive and propulsion technology, industrial engineering, power grid protection, and power transmission and generation. The information flyer is available at <http://files.messe.de/cmsdb/GB/001/24511.pdf>.
- The AAAS journal *Science* published on April 8 a Special Issue devoted to superconductivity, see <http://www.sciencemag.org/content/332/6026.toc>.
- The IOP high-impact-factor journal *Reports on Progress in Physics* announced on April 28th free access to a “Back History Collection” of representative superconductivity-themed papers published between 2000 and 2010. The free access opportunity will end on December 31, 2011. To download the papers, please, go to http://iopscience.iop.org/0034-4885/page/Celebrating_100_Years_of_Superconductivity
- **The 2011 Materials Research Society (MRS) Spring Meeting**, USA, was held in San Francisco, CA, from April 25th to 29th. To commemorate the centennial of superconductivity, a talk by David Larbalestier was given in Symposium X “Frontiers of Materials Research”. The talk’s title was “Superconductivity at 100 – the Achievements, the Promises and the New Challenges”. It concentrated on how to develop appropriate strategies for dealing with complexities of anisotropic high-temperature materials to make insertion into energy technology and the electric grid realistic. The Spring Meeting website is: www.mrs.org/spring2011.
- The *APS News* published in its vol. 20, No.5 of May 2011 a first-page lead article “[Promise Lies Ahead for Superconductivity After 100 Years](#)”. It overviews the March Meeting Centennial and Forum sessions (see above) and conjectures on the future including quotes from comments by a few prominent scientists.
- **At the IEEE Microwave Theory & Techniques Society (MTT-S) International Microwave Symposium (IMS, Baltimore, 5-9 June 2011)** organized was a special session “100 Years of Superconductivity (1911-2011) - Existing and Emerging RF Applications of Superconductivity” (Session WE1F). The program and abstract of

the special session can be found [here](#). The IMS website is: <http://ims2011.org/>.

- **The 2011 Gordon Research Conference on “Superconductivity”** was held at the Waterville Valley Resort, NH (USA), from June 5 to 10, 2011. It commemorated the 100th anniversary of the discovery of superconductivity by providing a forum for discussion of the latest experimental and theoretical advances in this field. The conference brought together experts to address the current challenges in understanding correlated superconductors - from cuprates and pnictides to heavy fermion superconductors. The fundamental mechanisms of superconducting pairing, the underlying explanations for thermodynamic phase diagrams including potential importance of competing phases, the correspondence between these phenomena, and the transport and spectroscopic properties of these materials will be among the themes of the conference. Also discussed was the feasibility of using lessons learned from the study of known superconductors as a guide to the future discovery of novel and higher temperature superconductors. Speakers were strongly encouraged to present new, unpublished work, which ensured that discussions evoke and explore new research directions. The participation of young scientists at the graduate student or post-doctoral level were encouraged by the offering of selected presentations, focused discussions with invited speakers, and poster sessions. In addition, the organizers have earmarked funds to facilitate attendance of members of groups underrepresented in science and engineering. For the information on this Gordon Conference see <http://www.grc.org/programs.aspx?year=2011&program=supercon>.
- **At the CEC-ICMC meeting** in Spokane, WA, USA, held on June 13 to 17, 2011, a “Special commemorative Symposium” was sponsored by ATI Wah Chang and Luvata Waterbury, Inc. That Symposium on “100 Years of Superconducting Materials, Machines and Cryogenics” consisted of two parts: [PL2A](#) and [PL2B](#). One of the presentations is included in the ESNF Issue 17, paper CR 21.
- **At the Aspen Center for Physics** (www.aspenphys.org) an informal Workshop on “A New Century of Superconductivity: Iron Pnictides and Beyond” was held from June 26 to July 24, 2011. The organizers were: Elihu Abrahams, University of California, Los Angeles, Jiangping Hu, Purdue University, Richard Greene, University of Maryland and Zlatko Tesanovic, Johns Hopkins University. The deadline for applications to participate was January 31st, 2011.

Third Quarter of 2011

- **The International Conference on Novel Superconductivity (ICNSCT 2011)**, held in Taiwan from August 4 to 9th, 2011, there was a special Symposium commemorating the centenary of superconductivity and dedicated to the late Bernd T. Matthias. Invited speakers reviewed the current status of superconducting cuprates, heavy fermion materials, pnictides, organic superconductors, *etc.* The ICNSCT was one of satellite meetings of the LT26 held in Beijing, China (see below). The program and all other information is accessible at <http://www.phys.sinica.edu.tw/~ICNSCT2011/program.php>.
- The next major meeting that planned some centennial celebrations is the **26th International Low-temperature Physics Conference (LT26)** held in Beijing, China, from August 10th to 17th, 2011. The LT26 website is: <http://lt26.iphy.ac.cn/>. The full program is posted there. The evening [Session 12E](#) on August 12, at 19:30 is dedicated to the centennial.
- **The International Conference on Magnet Technology, MT-22** was held in Marseille, France, from September 12 to 16th (see www.mt22.org), it celebrated the 100th anniversary of superconductivity with a special reception on Monday evening, September 12th. Among others, the event featured a video presentation chronicling the last 100 years of superconductivity development, with an emphasis on how superconductors have grown from laboratory curiosities to a key enabling technology for the world's most powerful magnets.
- **The “Superconductivity Centennial Conference”** was held in The Hague, Netherlands, from the 18th to 23rd of September 2011. It was conceived as the towering event of the 2011 celebrations and represented a one-time joint meeting of EUCAS (European Conference on Applied Superconductivity), ISEC (International

Superconducting Electronics Conference) and ICMC (International Cryogenic Materials Conference). The meeting was held in the "World Forum Den Haag", because in Leiden no conference center of sufficient size exists. The program included a "History Day" and provided the opportunity to visit Leiden and the Kamerling Onnes Laboratory. The program of the "History Day" included 8 talks on topics listed [here](#). This event was accessible without fee. The Conference website is: www.eucas2011.org (or www.isec2011.org or www.icmc2011.org).

- In conjunction with the Superconductivity Centennial Conference, CRC of the Taylor&Francis Group plans to publish a **book on "100 Years of Superconductivity"**. The aim of this book is to give an impression to the non-specialized reader on how major research results in superconductivity were achieved, what the current status of superconductivity research is and what one can expect in the future - a personal tint of the authors should take this book out of the sphere of dry scientific monographs. Instead it should give a global overview over the field without being too specialized. It will also contain personal stories linked to achievements in the field. Physics students and teachers should be capable of reading and enjoying this book. It will be distributed to registered conference participants and available in bookstores. The CRC online preview of this publication is available at: http://www.crcpress.com/product/isbn/9781439849460;jsessionid=2d7U9BLEz5NzsvsefFAd2A**. The book was to be distributed to the Superconductivity Centennial Conference attendees, but that did not happen due to editorial and publishing delays. The publication and distribution date is currently unknown.
- **The book "BCS: 50 Years"**, edited by Leon Cooper and Dmitri Feldman and already published by World Scientific (ISBN 978-981-430-464-1, US\$ 135.00 and ISBN 978-981-430-465-8, US\$ 65.00 as paperback) is another tribute to the centennial. In July 2011 *Physics Today*, see <http://www.physicstoday.org/resource/1/phtoad/v64/i7>, Mac Beasley gave it a rave review.

Fourth Quarter of 2011

- The 4th International Conference "Fundamental Problems of High Temperature Superconductivity" (FPS'11) was held at the recreation Center "Zvenigrodskii" in Zvenigrod, 40 km west of Moscow, Russia, on October 3-7, 2011. The program is available [here](#). The still active website of FPS'11 is <http://fps11.lebedev.ru/en/other/>. The Proceedings will be published in a special issue of the "Journal of Superconductivity and Novel Magnetism" (Springer), tentatively in the beginning of 2012.

Regional Centennial Events

In addition to the major or special events mentioned above, some regional events are also planned worldwide. Those about which we obtained information are listed below.

Australia

At the Australian 35th Annual Condensed Matter and Materials Meeting two invited talks on superconductivity were given to mark the centennial:

1. "100 years of superconductivity: 25 years of HTS" by J.L. (Jeff) Tallon and
2. "Superconductivity: From Zero Resistance to Terahertz Devices" by J.C. (John) Macfarlane.

This meeting was held at the Charles Sturt University, in Wagga Wagga, NSW, from February 1st to 4th, 2011. The first notice is reproduced [here](#); the website of the meeting now contains the full program, see <http://www.phys.unsw.edu.au/wagga11/>.

France

The celebrations of the 100th birthday of superconductivity are known under the general short name "Supra2011".

Contents developed for large audience (available in English as well) :

- A pedagogical website, both in English and French:

www.superconductivity.eu (or www.supraconductivite.fr)

with many explanations, animations, videos, games... (accessible from ESNF "Resources")

- A movie about superconductivity, both in English and French :
"100% conducting:superconductors" soon on dailymotion.fr

Events :

All events all over France are detailed at www.supra2011.fr among which we highlight:

- April 2011: The opening day in Paris, at the CNRS Center.
- June 18, 2011: a special "Day of Superconductivity" for the general public and media at [Musee des arts et métiers](http://www.musee-des-arts-et-metiers.fr) (Paris)
- October 4, 2011 : Superconductivity Day with conferences and animations in the "Salon Mesure Expovision"(an exhibition) in Paris, see <http://www.mesurexpovision.com/>,
- During the whole year 2011: Superconductivity exhibit and animations in "Cit  des Sciences" and "Palais de la D couverte", the two science museums in Paris, and a special week about superconductivity end of October at Cit  des Sciences (see www.universcience.fr)
- Various exhibits and conferences in France (for example at Grenoble, an exhibit from May to July: <http://www.ccasti-grenoble.org/>)
- A poster-style exhibit (13 panels) is available for reproduction by interested educational and research institutions (for free, but only in French)
- A collaboration with the design school ENSCI about how to use levitation for new objects and ideas

Those interested in French centennial events may wish to contact Prof. Julien Bobroff jubobroff@gmail.com¹ or contact contact@supraconductivite.fr

Russia

In Russia, a regional conference (in Russian) on "Fundamental Questions of Superconductivity: Achievements and Perspectives 100 Years from Discovery" (our loose translation) was organized by the company "Russian Superconductor". This meeting was held in Moscow on March 3rd, 2011. It was supposed to be attended also by representatives of decision making government organizations and industry, including the financial sector. Attraction of additional funding for superconductivity research and high-technology projects was one of the stated goals of this meeting. Information on this event is available at www.rhsc.ru; an English version exists.

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Switzerland

In Switzerland, the superconductivity centennial celebrations were organized by different Institutions and organizations:

MaNEP (The National Centre of Competence in Research on Materials with Novel Electronic Properties) together with the **University of Geneva** and the **PhysiScope** planned for:

- April 2011: Open days at the PhysiScope. During one week, a daily one hour show on superconductivity was prepared for the general public. The PhysiScope is a demo-lab where students have the unique opportunity for a close and personal encounter with science through an interactive discovery of physics (www.physiscope.ch).
- September and October 2011: Science and Arts will work hand in hand to highlight the magic of superconductivity. Exhibition, show.

CERN (European Organization for Nuclear Research):

- April, 2011, one day: Reproduction of the prototype experiment of 1911 and presentation by Philippe Lebrun on superconductivity. Suitable for teachers, students and the general public.
- October 10-15, 2011; during the French Science Festival event, visits, demos, exhibitions, film, show by the PhysiScope Genève. Suitable for the general public (www.cern.ch).

MaNEP with the **Paul Scherrer Institute** :

- « Open House day »: PSI celebrated the superconductivity centennial in relationship with the institute open house day. Intended for the general public. The date was October 16, 2011 (www.psi.ch).

Swiss Physical Society :

- The Joint Annual Meeting of the Swiss Physical Society and the Austrian Physical Society, together with Swiss and Austrian Societies for Astronomy and Astrophysics was held at EPF Lausanne on June 15 to 17, 2011. One of the topical sessions was devoted to “100 Years (of) Superconductivity”. Also, one of the plenary talks under the same title was given by Øystein Fischer, University of Genève, Switzerland. The website of the meeting is: http://www.sps.ch/en/events/gemeinsame_jahrestagung_2011/. An English version is available
- Autumn 2011, Bern: Symposium entitled «100 Jahre Supraleitung» (in German „100 Years of Superconductivity“). It included three presentations for the general public (www.sps.ch).

United Kingdom

In England, the following regional events took place:

1. On January 19, 2011, a session of the UK Magnetics Society was held, featuring the 24th Ewing Lecture: “100 Years of Superconductivity, 50 Years of Superconducting Magnets”. The lecture was given by Martin Wilson, one of the pioneers into the field of superconducting magnets. In addition, four talks on various superconductivity topics were included. The detailed program of the event, including the information on the exact location and registration fee, is available [here](#).
2. The Institute of Physics organized a celebratory two-day Workshop on “100 + 25”, which stands for “Hundred Years of Superconductivity and 25 Years of High-temperature Superconductivity”. The workshop was held at the University of Cambridge on July 11 and 12th, 2011. The provisional program of the Workshop is available [here](#).

United States

- The Annual Meeting of the American Association for the Advancement of Science (AAAS) included a session on “Superconductivity: From 1911 to 2021”. The session was held on Saturday, February 19, 2011, from 1:30 PM to 4:30 PM at the Washington Convention Center, 146B). Featured speakers were Jörg Schmalian, Alex

Malozemoff, David Larbalestier, Zahary Fisk, Robert Cava and David Pines. The AAAS announcement of this celebratory session has been accessible at <http://aaas.confex.com/aaas/2011/webprogram/Session3569.html>.

- The Second New York State Superconductor Technology Summit - Celebrating the Centennial of the Discovery of Superconductivity, will be held on Friday, August 5, 2011 at the Schenectady Museum, Schenectady, New York. The event, being coordinated by GE Global Research, Philips Medical Systems MR, SuperPower Inc. and the IEEE, will highlight the important technology advancements made by New York State organizations over the past 100 years and the promise for the future through a number of talks, moderated panel discussions, exhibits and demonstrations of the technology. Featured centennial speaker is Dr. Dirk van Delft, Director of the Boerhaave Museum in Leiden, the Netherlands. Other speakers include leaders from government, industry and academia around New York State. Information about the August 5 Summit and the August 4 Centennial Banquet can be found at: <http://events.r20.constantcontact.com/register/event?llr=iki9ubdab&oeidk=a07e3qqdtn96828298d>