

Faces & Places

CO-OPERATION

Sri Lanka strengthens partnership with CERN

CERN and Sri Lanka have formed a partnership with the aim of formalizing and broadening their co-operation. To this end, CERN's director-general, Rolf Heuer, and Sri Lanka's permanent representative at the United Nations in Geneva, Ravinatha Aryasinha, signed an expression of interest on 25 June 2015.

The agreement incorporates Sri Lanka in CERN's High School Teachers and Summer Student programmes. It also aims at preparing a platform that will allow more scientists from Sri Lanka to participate in CERN's cutting-edge research programmes. Several scientists from Sri Lankan universities have already participated in LHC experiments within frameworks such as sabbatical leave, while others have participated as visiting scientists employed by universities in other



Ravinatha Aryasinha, left, and Rolf Heuer, signing the expression of interest. (Image credit: CERN-PHOTO-201506-146-7.)

countries. To allow for broader and more sustained participation, discussions have begun on forming a "cluster" of Sri Lankan universities and research institutes with the aim of joining one of the LHC collaborations.

Sri Lanka is the most recent Asian country to have strengthened its partnership with CERN. Others include those as diverse as Bangladesh, Thailand, Indonesia and Mongolia.

APPOINTMENT

Amber Boehnlein takes charge of IT at Jefferson Lab

Amber Boehnlein is the new chief information officer (CIO) at Jefferson Lab. As CIO, she is responsible for the Information Technology (IT) Division as well as the IT systems, including scientific data analysis, high-performance computing, IT infrastructure and cyber security.

Boehnlein arrived at Jefferson Lab in June, having led the Computing Division at



Amber Boehnlein. (Image credit: Jefferson Lab.)

SLAC from 2011. At SLAC she gained expertise in computational physics relevant to light sources and large-scale databases for astrophysics, as well as overseeing

the hardware computing systems for the high-energy physics programme. Prior to her time at SLAC, she served a three-year assignment as the US Department of Energy's Office of High Energy Physics programme manager for the US Large Hadron Collider Detector Operations programme.

Having gained a PhD in physics in 1990 at Florida State University, Boehnlein was a member of the DØ collaboration at Fermilab from 1991 to 2013, and served as the collaboration's computing and software co-ordinator from 1999 to 2006. As a staff scientist in the Computing Division at Fermilab, she was responsible for the computing and application support for all Fermilab-based experiments.

AWARDS

CERN receives Hermes Innovation award

CERN's leading role in international scientific co-operation has been recognized with a 2015 Hermes Innovation award. The European Institute for Creative Strategies and Innovation makes the awards for "humanistic innovation" annually to selected organizations and companies that have excelled in offering more satisfaction to society through their products and services. The awards, which are linked to up to eight themes, are named after Hermes – in Greek mythology an ingenious and inventive god

who supports human ventures.

● For more about the event, see www.rencontre-innovation.com/.

Frédéric Bordry, centre with the Hermes award, Marc Giget, right, and Sylvie Borzakian, left, respectively, founder/president and director of the Club de Paris des Directeurs de l'Innovation and the European Institute for Creative Strategies and Innovation. (Image credit: M Iesci/ Hermes Award.)



Faces & Places

Philippe Lebrun honoured by the cryogenic community

CERN's Philippe Lebrun has received the prestigious Samuel C Collins Award from the Cryogenic Engineering Conference. Named after the American physicist who developed the first practical helium liquefiers, the award is given to an individual "who has remarkably devoted themselves in the identification and solution of cryogenic engineering problems, and has subsequently demonstrated their concern for the cryogenic community with their dedicated and unselfish professional service and leadership to this community".

Lebrun conducted the R&D on the superfluid helium cryogenic system for the LHC. He then led CERN's Accelerator Technology Department during the construction of the machine, and played a major role during the construction of the cryogenic high-field magnets. He received the award during the 2015 Cryogenic Engineering Conference and International Cryogenic Materials Conference, which took place on 28 June–2 July in Tucson.



Philippe Lebrun, right, receiving the award from Ray Radebaugh, chair of the Awards Committee of the Cryogenic Engineering Conference and a former recipient of the award. (Image credit: Werner K Huget.)

Della Negra and Virdee receive awards for leadership

The "founding fathers" of CMS, Michel Della Negra of CERN and now Imperial College, and Tejinder Virdee of Imperial College, have been awarded, respectively, the 2014 André Lagarrigue Prize and the 2015 Glazebrook Prize.

Della Negra is cited as "a leader with a deep understanding of physics, in Lagarrigue's lineage" and for his "outstanding qualities as a builder of experimental devices of great complexity" in his role as a major player in the discoveries at CERN of the W, Z and Higgs bosons.

Virdee is cited for "his leadership of the CMS experiment at the LHC, where evidence for the Higgs boson was revealed after 20 years of research" and for "his prominent role in the innovative design and lengthy construction of the CMS experiment, in particular the scintillating-crystal-based electromagnetic calorimeter, a vital piece of the 'toolkit' necessary to discover the Higgs boson".

Della Negra started his career at the Collège de France with a thesis in 1967 on a bubble-chamber study of proton–antiproton annihilations at rest. He then pursued physics at the Intersecting Storage Rings at CERN, where he convinced the Split Field Magnet collaboration to focus on high- p_T physics. Having there demonstrated the capabilities of a 4π multi-purpose detector, he became involved in the proposed proton–antiproton collider in the Super Proton Synchrotron, and made decisive contributions to the design of UA1 – another 4π detector.

Virdee carried out his graduate studies at Imperial College London, on the hybrid bubble-chamber at SLAC. In 1979, as a CERN fellow he worked on the NA14 photo-production experiment, where the fractional electric charge of the quarks was measured. Virdee also collaborated on the UA1 experiment at CERN. His keen interest in hadron-collider physics and precision calorimetry in UA1 led to his prominent role in the CMS experiment.

Della Negra and Virdee were among the first physicists to support the project that became the LHC. In 1989, they started thinking of a 4π detector for the new machine, based on a strong magnetic field produced by a large solenoid capable of containing the inner tracker and the calorimeters. Della Negra focused on the optimization of the muon and trigger



Michel Della Negra, right, and Tejinder Virdee, recipients, respectively, of the Lagarrigue award and the Glazebrook prize, in the CMS control room in 2008. (Image credit: CERN.)

systems, and Virdee on a high-precision electromagnetic calorimeter, with a view to discovering the Higgs boson through its decay into four muons and two photons.

In 1992, Della Negra was elected the CMS collaboration's first spokesperson, with Virdee as his deputy, until 2006. This period saw the conception, R&D and prototyping, and much construction of the CMS experiment. During this period, Della Negra and Virdee took many critical and difficult decisions to ensure the optimal performance and success of the CMS experiment. In 2006, Virdee was elected spokesperson for three years, during which he oversaw the complex task of the completion of construction, installation and commissioning underground, and the first collision data-taking. The discovery of the Higgs boson by both the ATLAS and CMS experiments at the LHC was announced in July 2012.

The Lagarrigue award, established in 2005 under the aegis of the French Physical Society, pays tribute to André Lagarrigue, director of the Laboratory of Linear Accelerator (LAL, Orsay) from 1969 to 1975, who had a major role in the discovery of neutral weak interactions with the Gargamelle bubble-chamber at CERN. Co-funded by the CEA, CERN, Ecole Polytechnique, IN2P3-CNRS, LAL and Université Paris-Sud, the prize is awarded every two years.

The Glazebrook medal and prize is a premier award of the UK's Institute of Physics (IOP), and is named after its first president.

Faces & Places

IOP recognizes work in deep-inelastic scattering

For distinguished work in particle physics, Amanda Cooper-Sarkar of Oxford University has been awarded the IOP's Chadwick Medal and prize. She receives the award for "her study of deep-inelastic scattering [DIS] of leptons on nuclei, which has revealed the internal structure of the proton". As a world expert in DIS, her career has covered all forms of lepton-proton scattering and the study of QCD to elucidate the structure of the nucleon.

Cooper-Sarkar has distinguished herself in devising techniques to distil the experimental data into knowledge that



Amanda Cooper-Sarkar receives the IOP's Chadwick Medal. (Image credit: University of Oxford.)

could be interpreted and extrapolated in QCD. She was recently a leading figure in preparing the final papers in the area of DIS from the Hadron Electron Ring Accelerator at DESY, and also plays a leading role in the ATLAS groups at CERN that are making new measurements of the proton's structure function.

The Royal Society honours particle physics

Peter Higgs, professor emeritus at the University of Edinburgh, has joined the ranks of Charles Darwin, Humphry Davy and Albert Einstein by winning the world's oldest scientific prize, the Royal Society's Copley Medal, which was first awarded in 1731. Higgs receives the 2015 award for his work that contributed to what is known as the Brout-Englert-Higgs (BEH) mechanism, which endows fundamental particles with mass. The particle known as the Higgs boson – the emissary of this mechanism – was discovered by the ATLAS and CMS experiments at the LHC in 2012.

The Royal Society has also recognized research in particle physics and at the LHC with the awarding of one of its Royal Medals to Chris Llewellyn Smith, who was director-general of CERN from 1994 to 1998. Llewellyn Smith is honoured for "his major contributions to the development of the Standard Model, particularly his success in making the case for the building of the Large Hadron Collider". The Royal Medals, founded by King George IV in 1825, are awarded for the most important contributions in the physical, biological and applied sciences.



A Copley Medal for Peter Higgs, top, and a Royal Medal for Chris Llewellyn Smith, above. (Image credits: B Nyman, top, and C Llewellyn Smith.)

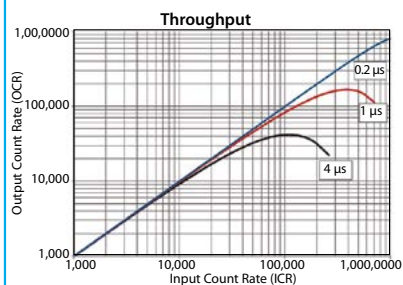
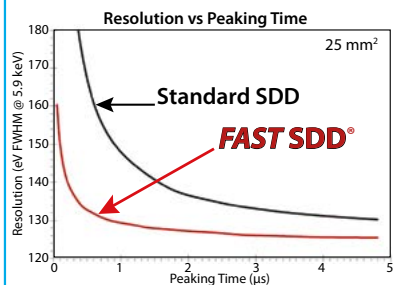
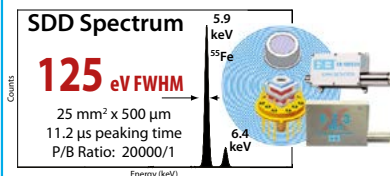
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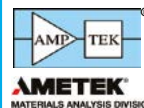
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OUTREACH

MoEDAL takes monopoles to London

The MoEDAL experiment at the LHC and its “Monopole Quest” were on show at the Royal Society’s 2015 Summer Science Exhibition on 30 June–5 July. The week-long display of the most exciting cutting-edge science and technology in the UK took place, as customary, at the society’s base in London. The exhibition featured 22 exhibits, where hundreds of visitors could meet the scientists, try some of the hands-on activities or attend inspiring talks and events.

Visitors to the MoEDAL exhibit could design their own monopole detector, take part in the “Citizen Science” project to search online for monopole tracks in exposed MoEDAL plastic nuclear-track detectors, and test MoEDAL trapping volumes for captured monopoles. They could also visualize a Dirac monopole and investigate radioactivity on their mobile phones using a MoEDAL TimePix Chip. Involvement was awarded with gifts and prizes, which included a MoEDAL medal. There was fun for all, including the team looking after the exhibit, despite the unusual London temperatures that



Members of the MoEDAL team at the Royal Society Summer Exhibition (with their MoEDAL medals), on shift at the first formal soirée. Left to right: Arttu Rajantie and Edward Gillman of Imperial College London, Mairi Sakellariadou of King's College London, James Pinfold of the University of Alberta, and Anna Evans, Caitlin Cooke and Becky Parker of the Simon Langton School. (Image credit: Courtesy J Pinfold.)

soared to higher than 30 °C.

● The MoEDAL groups involved in proposing, designing and eventually staffing the exhibit were from Imperial College

London, King's College London, CERN, the University of Alberta, Langton Star Centre and the Simon Langton Grammar School for Boys.

CONFERENCE

QCD-Montpellier celebrates 30th anniversary

Every one to two years, Montpellier hosts the International Conference in Quantum Chromodynamics (QCD). Initiated in 1985 by Stephan Narison, director of research of the French National Research Centre for Scientific Research at the Laboratory of Universe and Particles of Montpellier, as a conference on non-perturbative methods, it took on the name QCD in 1990, and since 2001 has alternated with the International High-Energy Conference (HEPMAD) in Madagascar. This year, QCD-Montpellier celebrated its 30th anniversary at its 18th edition, which took place on 29 June–3 July.

During its 30 years, the conference has welcomed many world experts to Montpellier, including Nobel prizewinners – Jack Steinberger attended in 1997, David Gross in 1998 and Gerard 't Hooft in 1998 and 2002 – as well as winners of the J J Sakurai prize: Stanley Brodsky in 1990 and 2014, Mikhail Shifman in 2008 and 2010, and Valentin Zakharov, who has been a member of the International Committee and regular participant since 1996.

The conference also provides training



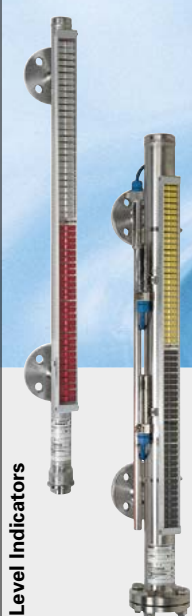
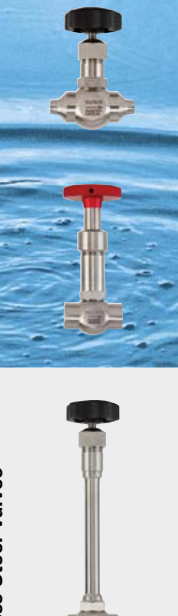
Participants at QCD 15. (Image credit: alizé photo.)

for doctoral students and young postdocs, who are often present and talk for the first time in front of international QCD experts. The meeting's size of around 100 attendees, with equal numbers of theorists and experimentalists, allows participants to interact in a relaxed atmosphere, created by the well-organized social events and by the beauty of Montpellier and its surroundings, which favour discussions and the initiation of future collaborations.

Unlike other workshops, QCD-Montpellier covers all aspects of QCD including those related to searches for

new physics beyond the Standard Model. It is also a meeting where new experimental results are often presented before the large international particle-physics conferences – or at the same time, as with the special session that took place on 4 July 2012 to present the Higgs discovery by ATLAS and CMS by video conference.

● For more on QCD 15, visit www.lupm.univ-montp2.fr/users/qcd/qcd15/Welcome.html. For HEPAMD 15, which will take place on 17–22 September, see www.lupm.univ-montp2.fr/users/qcd/hepmad15/Welcome.html.

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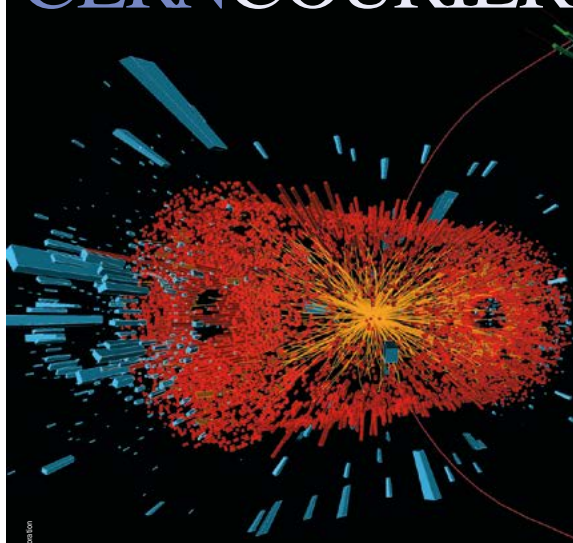
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ANNIVERSARY

Conference celebrates 60 years of Yang–Mills theories

On 1 October 1954, *Physical Review* published the seminal paper by Chen-Ning Yang and Robert Mills that was to become a cornerstone of theoretical physics. The Yang–Mills gauge field theory laid the foundation of the Standard Model of particle physics, and also went on to have widespread applications in statistical physics, condensed-matter physics, atomic and nonlinear optics and nonlinear systems. In May, the Institute of Advances Studies, Nanyang Technological University in Singapore, held a major conference on “60 years of Yang–Mills gauge field theories”, attracting more than 180 participants from around the world.

Many eminent speakers attended to present results related to Yang–Mills gauge theories, including, in particular, Yang himself. (Sadly, Mills died in 1999.) The presentations included interdisciplinary talks by Paul Chu on “A possible paradigm shift in the search for higher T_c ”, Robert Crease on “Yang–Mills for historians and philosophers” and Antti Niemi on “Folding proteins at the speed of life”. There were also interesting reminiscences by Yu Shi and Zhong-Qi Ma of the immense contributions by Yang to physics in general. In addition, David Gross, Michael Fisher and Yang gave public lectures on personal perspectives on physics.

Because the famous paper was written



Participants surround Chen-Ning Yang, centre front. (Image credit: Institute of Advanced Studies, Nanyang Technological University.)

when Yang and Mills shared an office during the summer at Brookhaven Laboratory, the conference also included a round-table discussion on the role of regional labs and hubs in promoting collaboration in theoretical and fundamental physics. Various suggestions were made during the discussion, including strong arguments for

creating an Asian version of CERN, where Asian countries could work with scientists from the rest of the world to uncover new levels of fundamental physics.

● For more about the conference, see www.ntu.edu.sg/ias/upcomingevents/Yang-Mills60/. The proceedings will be published by World Scientific.

VISIT

The prime minister of the Italian Republic, **Matteo Renzi**, visited CERN on 7 July, accompanied by Italy's minister for education, university and research, **Stefania Giannini**. They were welcomed by members of the CERN management together with **Carlo Rubbia**, former director-general and senator for life of the Italian Republic. During the visit they toured the ATLAS control room, as well as the ATLAS experimental area and the LHC tunnel, before meeting Italian physicists working at CERN. Left to right: Sergio Bertolucci, CERN's director for research and scientific computing, Matteo Renzi, Fabiola Gianotti, director-general designate at CERN, Stefania Giannini, Rolf Heuer, CERN's director-general, and Carlo Rubbia. (Image credit: CERN-PHOTO-201507-150 – 103.)



Faces & Places

OBITUARIES

Bernard Hyams 1925–2015

Bernard Hyams, a distinguished scientist who worked at CERN for 32 years, died on 15 May at the age of 90.

Bernard began his research career in Patrick Blackett's Laboratory at Manchester University, where he joined the teaching staff in 1950 and worked on a magnetic spectrograph to measure the momentum of single cosmic-ray particles. He went on to lead the group that set up a cosmic-ray experiment at the Pic du Midi Observatory, which in 1953–1955 observed eight well-identified unstable particles having properties consistent with the $K\mu$. He submitted his PhD thesis, on a search for antiproton production by high-energy cosmic-ray particles, in 1955.

Visiting CERN on sabbatical in 1958, Bernard participated in an experiment conducted in the Löttschberg Tunnel in the Swiss Alps, which showed that the nucleon lives longer than 2×10^{26} years – a subject that was to gain importance many years later. He accepted a staff appointment at CERN in 1959 and performed one of the first experiments at the Proton Synchrotron (PS), demonstrating that in pion decay the muon's spin behaves as expected. After studying vector-meson decays into muon pairs, he then spent several years working on precision measurements with pions. In the mid-1960s, together with Ulrich Stierlin of MPI Munich, he organized a group specializing in meson spectroscopy, which as the CERN–Munich collaboration, went on to perform a long series of experiments at the PS, well into the 1970s.

When the Intersecting Storage Rings (ISR) started operation at CERN early in 1971, there was no experiment in place that was capable of looking for quarks, even though the ISR were constructed as a “discovery machine”. So Bernard acted decisively, supporting a small and mostly young team of physicists who proposed a relatively simple experiment to search for the putative particles, which many people expected to be discovered at the ISR. Thanks to Bernard's leadership, the ISR Committee swiftly



Bernard Hyams. (Image credit: Vincent Chabaud.)

approved the experiment, R402, which – unsurprisingly with hindsight – found no candidates.

Around 1974, the CERN–Munich group joined forces with others to form the long-lasting Amsterdam–CERN–Cracow–Munich–Oxford–Rutherford (ACCMOR) collaboration, which performed a well-known series of experiments at the Super Proton Synchrotron, first in the West Area (WA3), before moving to the North Area (NA11 and NA32). With the discovery of charmed particles, Bernard became interested in the study of their decays using silicon-microstrip detectors, which were implemented in the NA32 experiment.

In the early 1980s, he became a pioneer of the use of silicon microstrips for high-precision vertex measurements at particle colliders, in particular applying the technique in the DELPHI detector at CERN's Large Electron–Positron (LEP) collider. During a sabbatical year at SLAC, in collaboration with Sherwood Parker and James Walker, he developed a VLSI chip for microstrip read-out, allowing compact vertex detectors to be built for collider experiments. The proposal for the DELPHI device was put forward, and part of the microvertex detector collected data during the first LEP run in August 1989. It was completed for the

next running period in 1990 and upgraded successfully a number of times.

While continuing his research work, Bernard was also leader of CERN's Experimental Physics Division from 1984 to 1987. Overall, he spent 32 years at CERN before retiring in April 1990. In 2002, he received the title of Honorary Professor of the Institute of Nuclear Physics at Cracow for his role in bringing Cracow's physicists into modern experiments at CERN. The *laudatio* forms an excellent tribute to Bernard's career in general, recognizing “his outstanding achievements in experimental particle physics, his role in introducing many scientists to the mysteries of modern physics and his great contribution to the development of scientific collaboration between CERN and national physics institutions”.

Discussing a physics project with Bernard was always special. With his brilliant mind he would quickly grasp the essential points, making suggestions for improvements or criticizing, if warranted, with his keen British sense of humour. He was always attentive to the feelings of others, and visibly enjoyed CERN's exciting research atmosphere and the contact with younger colleagues. Because of his wisdom and generosity, many requested his advice, especially when difficult decisions had to be taken. He was scrupulously fair and never pushed himself to the forefront, preferring to work hard in the shadows for the good of the collaboration. It was a privilege to know and work with him. His influence went far beyond the boundaries of CERN, and all of his colleagues, no matter where located, remember him as a great friend who will be sorely missed.

Bernard was very attached to his family, from his wife Hanna to his granddaughter Solongo. He died just one month after his beloved wife, surrounded by his family.

Our warmest thoughts and sympathy go to them and to the many others who have shared an important part of their professional lives with Bernard.

● *His friends and colleagues.*

Yanglai Cho 1932–2015

Yanglai Cho, a principal member of the small dedicated team that brought the Advanced Photon Source (APS) to Argonne National

Laboratory, passed away on 14 June. He was 82 years of age.

Cho received his BS in physics from

Seoul National University in 1956, his Master's from Brigham Young University in 1958 and his PhD from the Carnegie

Institute of Technology in 1966. He was also an instructor in the physics department at Vassar College from 1960 to 1962. In 1967, he joined the Carnegie Institute of Technology as a research physicist, and began his long and distinguished career at Argonne the same year, starting as a research associate. His earliest roots at Argonne were in high-energy physics, studying $K\pi$ scattering on the Zero Gradient Synchrotron (ZGS).

Developing an interest in accelerator science in the early 1970s, Cho undertook physics studies on the performance and upgrade of the ZGS. He became director of the accelerator group of the ZGS, and was responsible for the commissioning of the Intense Pulsed Neutron Source there – the first slow neutron source based on a proton synchrotron. His career at Argonne was interrupted briefly in 1983–1985, when he went on assignment to the University of Wisconsin's Synchrotron Research Center, first as associate director for accelerator technology then as acting director.

In 1983, a committee on major materials facilities commissioned by the US Department of Energy recommended the construction of a synchrotron light source operating in the 6 GeV range. Cho pointed out to Kenneth Klier, at the time Argonne's associate laboratory director for physical



Yanglai Cho. (Image credit: ANL.)

research, that Argonne was a natural site for the facility and that it should be pursued. Klier agreed, and Cho became one of the major drivers throughout the design, construction, commissioning and successful operation of what became the APS.

He served as project director in the formative years of the APS, and then became deputy associate laboratory director. He was technical director of the Spallation Neutron Source at Oak Ridge National Laboratory from 1999 to 2001 during the facility's early development, where he made the successful case for the first use of superconducting technology in a high-power proton linac.

Upon retiring from Argonne, Cho chaired

the Technical Advisory Committee for the Facility for Antiproton and Ion Research in Darmstadt. He also chaired numerous international conferences on accelerator science and technology, and had a leading role in facilitating the joint proposal between two agencies in the Japanese government that gave rise to the Japan Proton Accelerator Research Complex. He was the author of numerous peer-reviewed publications, and was awarded the University of Chicago Distinguished Performance Award by Argonne in 1986.

Cho also helped to initiate several other accelerator projects, particularly in Korea. Both the Pohang Light Source at Pohang University of Science and Technology and the Korea Multi-purpose Accelerator Project at the Korea Atomic Energy Research Institute benefited greatly from his initial design concepts and subsequent suggestions. He left his mark in his homeland, where all of his friends will forever miss his great humanity.

Yanglai Cho had tremendous energy and dedication, and a remarkable combination of technical brilliance and practicality. He leaves an important legacy.

● *Based – with permission – on the obituary published on the APS website: www1.aps.anl.gov/APS-News/Yanglai-Cho-a-Founder-of-the-APS-Dies-at-82.*

NEW PRODUCTS

FLIR Systems has announced a new version 4.2 of its ResearchIR thermal-imaging software. ResearchIR 4.2 provides researchers with a powerful tool for viewing, acquiring, analysing, and sharing thermal data captured with FLIR's scientific and R&D cameras. For the first time, it gives users direct access to MATLAB scripts within ResearchIR, allowing users to access their customized MatLab scripts directly for specially tailored image-analysis and processing tasks. For further information, tel +32 3665 5100, e-mail flir@flir.com or visit www.flir.com.

Intersil Corporation has announced the first 60 V synchronous buck controller able to bypass the intermediate step-down conversion stage traditionally employed in industrial applications. The ISL8117 synchronous step-down PWM controller's low-duty cycle (40 ns minimum on time) enables the direct step-down conversion from 48 V to a 1 V point-of-load. This technical achievement makes it possible for designers to reduce system complexity in infrastructure applications. For more information, contact Mark Alden, tel +1 408 546 3402, e-mail malden@intersil.com or visit www.intersil.com/products/isl8117.

Narda Safety Test Solutions has launched a new FFT analyser for low-frequency electromagnetic fields. The EHP-50F measures and analyses electric- and magnetic-field strengths in the frequency range 1 Hz to 400 kHz, and evaluates the results in accordance with current human safety standards. Narda has also expanded the features of its Interference and Direction Analyser, providing spectrograms with a time resolution of as fine as 1 μ s. This means that interference and hidden transmitters with rapidly changing frequencies can be analysed and then localized with subsequent operating steps. For more information, tel +49 7121/97 32 0, e-mail info.narda-de@L-3com.com or visit www.narda-sts.com.

The **ORTEC Products Group** of AMETEK Advanced Measurement Technology has announced the release of Profile "SP" Series P-type high-purity germanium (HPGe) detectors, providing premium resolution at low to medium energies for a range of demanding, radiation-detection applications. The detectors employ a low-noise back contact combined with a semi-planar crystal

geometry. The proprietary back contact of the Profile "SP" improves energy resolution at lower energies, while supporting the same resolution at higher energies. SP detectors also feature a stable, thin front-contact, allowing warm storage, simplified detector handling and lower associated storage costs. For more information, tel +1 865 482 4411, or visit www.ortec-online.com.

XP Power has announced the DDC15 and DDC30 series of low-profile 15 W and 30 W DIN-rail format DC–DC converters. The range is designed to offer additional voltages in DIN rail-power systems, provide isolated outputs and noise immunity or support battery-powered or battery-backed applications. The single output converters accommodate a 4:1 input range from 9–36 VDC, suiting 12 or 24 VDC nominal input. Both series are available with a choice of a 5, 9, 12, 15 or 24 VDC nominal output. The DDC15 model is available with a 3.3 VDC output. Input-to-output isolation is 1500 VDC. For further information, contact Steve Head, tel +44 118 984 5515, e-mail shead@xppower.com or visit www.xppower.com.

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