

# समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा  
A daily Current Awareness Service

Vol. 42 No. 276 12 December 2017



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## International Workshop on Physics of Semiconductor Devices: IWPSD 2017

Solid State Physics Laboratory (SSPL), a premier semiconductor research laboratory of DRDO is organising the 19th International Workshop on Physics of Semiconductor Devices (IWPSD 2017) jointly with Indian Institute of Technology (IIT), Delhi in association with Society for Semiconductor Devices, Semiconductor Society (India) and Society for Information Display. Chairman ISRO and Secretary Department of Space Dr. AS Kiran Kumar will formally inaugurate the event on 12 December 2017 at IIT Delhi in presence of Chairman DRDO & Secretary Department of Defence R&D Dr. S Christopher.

The biennial event IWPSD is considered as a prominent international forum on Advanced Semiconductor Technologies. The event held in India provides an opportunity for Indian researchers to interact with internationally acclaimed experts. Scientists and academicians from international and national educational institutes, government laboratories and leading industries interact to discuss state-of-the-art in advanced semiconductor R&D. The workshop has always received wide international participation and serves as the principal forum for dissemination of semiconductor research in South Asian region.

Semiconductor devices are used in the technological aids related to defence and space applications in addition to day-to-day consumer electronics.

The four day workshop has a strong technical program covering most of the emerging semiconductor R&D fields with five parallel sessions which will cover topics of current interest including VLSI technologies, Sensors, GaN (Gallium Nitrite) Materials and Devices, Opto-electronics, Crystal Growth & Epitaxy, Photovoltaics, Display Technologies, 2D materials & Organic Semiconductors and Semiconductors for Quantum Computing etc. Special emphasis will be given on the role of semiconductor technologies in space, defence and civilian applications.

Many renowned scientists and technologists from USA, Europe, Asia Pacific and other countries are participating in this event. Over 130 internationally acclaimed plenary/invited speakers will deliver talks on research in their field of expertise. In addition about 500 researchers from national Institutes like TIFR, NPL, IISc, IITs, NITs, CEERI etc. and other prominent Central and State universities would be participating in the workshop and over 500 research papers will be presented.

A number of prominent Industries in the area of semiconductor R&D are showcasing their products on the occasion. A special industry session is also being organized to promote Make in India theme. The workshop would also provide a platform for exploring possibility of establishing semiconductor manufacturing in India by Indian and foreign ventures.

*(This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed.)*



## Promote all 'staff only' Maj Gens: AFT

*By Vijay Mohan*

Observing that the Defence Ministry had not implemented an earlier Armed Forces Tribunal order calling for a review of the promotion policy of Major Generals in the "staff only" stream, the tribunal has held

that the ministry cannot pick and choose a batch for conducting a promotion board and in the process ignore similarly placed officers.

In May, the AFT had directed that the two-stream policy be reviewed to open avenues for Major Generals in the “staff only” stream to promotion to Lieutenant General within four months. Heretofore, “staff only” Major Generals did not get any further promotion compared to those in the “command and staff” stream. “Undoubtedly, the respondents have not done that,” a Bench comprising Justice Virender Singh and Lt Gen Sanjiv Langer ruled in its order last week.

Maj Gen Rajesh Sahai, who would have retired in his present rank on December 31, had moved the AFT after his representation for promotion in accordance with the tribunal’s orders was rejected by the ministry.

The petitioner had stated that a Major General of the 1979 batch was put through the board proceedings, the result of which is awaited. He averred that the board was undoubtedly held in pursuance of the tribunal’s earlier orders and while holding the board, it was strange that similarly situated officers of the 1980 batch were not considered. He had contended that when the Defence Ministry itself had delayed the implementation of the policy, it was inappropriate for it not to consider similarly situated officers who were well behind their peers.

“There appears to be no logic for not having held the board for the petitioner of 1980 batch when this batch itself is languishing two to three years behind his peers who are in other streams,” the Bench observed.

“In this case, when combat arms officers, who have been classified as staff only, are being considered for staff only appointments and have in any case fallen behind their peers, to allow that, to retire without even a consideration for the next rank and post would be completely unjust,” the Bench added.

Directing the Defence Ministry to hold a special selection board for the petitioner before his retirement and if found eligible to promote him, the Bench also ruled that his retirement would not be a hurdle for continuing service in higher ranks. Post-retirement, if found fit for promotion, he shall be reinstated and permitted to serve his full term as relevant to the higher rank.



*Tue, 12 Dec, 2017*

## **All Air Force exams set to go online**

All examinations of the Indian Air Force will now be conducted online. The Raksha Rajya Mantri Subhash Bhamre inaugurated the online examination web portal of Indian Air Force.

Online testing, or examination, will commence from January 2018 for Air Force Common Admission Test (AFCAT) for Officer’s cadre and scheduled test for Airmen Recruitment (STAR). Online registration commences on December 15.

Earlier, the Air Force had hundred plus centres across India for officer-cadre exam and 14 centres for airmen selection exams. Certain states and UTs did not have any such centre.

Consequently, candidates had to spend considerable time and resources on travelling to the test centres.

In the new system, there would be about 760 examination centre’s all over the country and the maximum distance a candidate would be required to travel now will be considerably less from the place of his/her residence.

It will enable approximately four lakh candidates for Airmen selection and two lakh candidates for officer’s selection, to appear in the exam every six months. The existing system had restrictions of geographical reach.

The Air Force is the first amongst the three services to take up Information Technology-enabled online examination. The C-DAC, a Government of India agency, has developed the software for it.

*Tue, 12 Dec, 2017*

## **India, Russia Mulling To Export Jointly Produced Weapons: Lavrov**

Listing improving trade relations, military-technology collaboration, education and personnel training as some of the new areas for cooperation with India, Russian Foreign Minister Sergey Lavrov on Monday said the two countries plan to continue military technical cooperation on joint production of weapons.

Speaking at the Kadakin Memorial Lecture at the Vivekanand Foundation, Lavrov said Russia and India are also considering supplies to third countries of their jointly produced weapons.

Defending his country's participation in China's Belt Road Initiative, Lavrov said Russia finds the concept interesting which needed to be explored in the context of building harmonious relationship for deeper regional trade and investment. On India's opposition to the BRI, he hoped New Delhi will find a way out to benefit from the connectivity project without sacrificing its position on the issues flagged by it.

"The specific problem in this regard should not make everything else conditional for resolving political differences," Lavrov said.

On a question with regard to Pakistan and terrorism, he said all countries have to act together to fight this menace without adopting double standards.

The Russian Foreign Minister also said that during their trilateral meeting External Affairs Minister Sushma Swaraj suggested improving not only India-China ties but also India's relations with Pakistan. He said that Russia will be ready to support Pakistan government's effort in combating terrorism.



*Tue, 12 Dec, 2017*

## **US, S Korea, Japan start missile-tracking drill**

The US, South Korea and Japan started joint exercises on Monday to track missiles from North Korea, Seoul's military said, following the nuclear-armed Pyongyang's longest-range test launch to date. The trilateral drill comes less than two weeks after Pyongyang test-fired a new intercontinental ballistic missile (ICBM) and declared it had achieved nuclear statehood, escalating global alarm over its weapons push.

The two-day exercise – the sixth since June last year – kicked off in waters near the Korean peninsula and Japan, Seoul's defence ministry said. "During the drill, Aegis warships from each country will simulate detecting and tracking down potential ballistic missiles from the North and sharing information," it said in a statement. Two US ships are taking part, with one each from the two Asian countries.

Both South Korea and Japan have security alliances with the US, although their own relationship is marred by disputes over history and territory. Washington and Seoul staged their biggest-ever joint air drill last week in a show of force against Pyongyang, which is subject to multiple sets of UN sanctions over its ballistic missile and nuclear weapons programmes.

Tension flared anew in the flashpoint peninsula after the November 29 launch of the Hwasong-15 ICBM, which the North claimed could deliver a "super-large heavy warhead" anywhere on the US mainland. Many analysts suggest that the rocket is capable of reaching the US mainland but voiced scepticism that Pyongyang has mastered the advanced technology needed to allow the rocket to survive re-entry to the Earth's

atmosphere. Last month's launch was the first test of any kind since September 15, and quashed hopes that the North may have held back in order to open the door to a negotiated solution to the nuclear standoff.

The North's leader Kim Jong-Un has traded threats of war and personal insults with US President Donald Trump, heightening fears of another war on the peninsula once devastated by the 1950-53 Korean War. The South condemned the launch and today imposed new unilateral sanctions on its neighbour.

## पंजाब केसरी

Tue, 12 Dec, 2017

### दक्षिण कोरिया ने उ. कोरिया पर लगाये नये प्रतिबंध

सोल, (एपी): दक्षिण कोरिया ने कहा कि उसने उत्तर कोरिया के हथियार कार्यक्रम के लिये धन की फंडिंग को रोकने के उद्देश्य से वहां के कुछ समूहों और व्यक्तियों को प्रतिबंधित सूची में डाला है। दक्षिण कोरियाई सरकार ने कहा कि 20 उत्तर कोरियाई समूहों और 12 व्यक्तियों के खिलाफ प्रतिबंध आज से प्रभावी है। उत्तर कोरिया द्वारा 29 नवंबर को किये गये मिसाइल परीक्षण के बाद उस पर नये प्रतिबंध लगाने वाले देशों में दक्षिण कोरिया सबसे आगे है। सरकार ने कहा कि उसे उम्मीद है कि उसके इस कदम से दूसरे देश भी ऐसा करने को प्रेरित होंगे।

## THE HINDU

Tue, 12 Dec, 2017

### ISRO developing a compact launcher for small satellites

By Madhumathi D.S.

*Will be capable of putting 500-600 kg satellites in orbits*

A low-cost small satellite launcher could be the next item on the menu of the Indian Space Research Organisation.

Preliminary work to design and develop an ambitious small launch vehicle began about three months ago, said K. Sivan, Director of ISRO's rocket development node, Vikram Sarabhai Space Centre. Its design will enable a handful of engineers to assemble it within a week. And the launcher should be able to put satellites of up to 500-600 kg in orbits close to the Earth.

VSSC has designed the vehicle using the rocket technology that it already has and is awaiting ISRO's approval. "We are looking at having a demonstration launch in a year, in the 2018-19 time frame," Dr. Sivan told *The Hindu*.

The development cost would be kept low at a few crore as the new launcher's requirement of advanced electronics is considerably lower.

It could also tremendously cut the launch fee that customers would have to pay. Which is what all space agencies aim at: low-cost access to space, as they call it.

Since 1999, ISRO's PSLV rockets have launched 209 small satellites from 28 countries for a fee; they have been for experimental, university or remote-sensing uses. In February this year, a PSLV carried a record

104 satellites to space. The next one planned in January 2018 will carry some 30 small customer satellites to space — their weights ranging from 1 kg to 100 kg.

### **Easy to assemble**

Today, it takes 300-plus engineers and about 40 days to assemble a PSLV. A small launcher that can be got up perhaps in three days by a small team would make a big difference in the market as well as to the launch provider, according to Dr. Sivan. For one, satellite operators need not wait one or two years to launch their spacecraft. In shared space rides, satellites going on the same rocket must have compatible sizes and shapes. The thinking, he said, is why waste a big vehicle for a small job?

Secondly, a ride on small launchers could even be a ninth or tenth of the present cost. ISRO, he said, will not be the first to think of a small launcher. “Globally, the small satellites market is booming as they are used for various applications. Some of ISRO’s satellites are also going to reduce in mass. As such, worldwide, operators and private players are developing small launchers to capture the market at a much lower cost,” he explained.

Global space industry consulting firm Euroconsult estimated in July that 6,200 smallsats — many of them constellations — would be launched during 2017-2026 and touch a market value of \$30 billion — up from \$8.9 billion in the last decade.

## **THE ASIAN AGE**

*Tue, 12 Dec, 2017*

### **Mars atmosphere well protected from solar wind: study**

*The findings show that a stronger solar wind mainly accelerates particles already escaping the planet's gravity.*

The Martian atmosphere is well protected from the effects of the solar wind, despite the absence of an Earth-like magnetic dipole, a study has found.

Present-day Mars is a cold and dry planet with less than one per cent of Earth's atmospheric pressure at the surface.

However many geological features indicate the planet had an active hydrological cycle about 3-4 billion years ago.

An active hydrological cycle would have required a warmer climate in the planet's early history and therefore a thicker atmosphere, one capable of creating a strong greenhouse effect.

A common hypothesis maintains that the solar wind over time has eroded the early Martian atmosphere, causing the greenhouse effect, and thus the hydrological cycle, to collapse.

Unlike Earth, Mars has no global magnetic dipole, but the solar wind instead induces currents in the ionised upper atmosphere, creating an induced magnetosphere.

"It has long been thought that this induced magnetosphere is insufficient to protect the Martian atmosphere," said Robin Ramstad from Umea University in Sweden.

"However our measurements show something different," Ramstad said.

Researchers using measurements from the Swedish particle instrument ASPERA-3 on the Mars Express spacecraft.

The spacecraft has been measuring the ion escape from Mars since 2004.

Researchers combined and compared measurements of the ion escape under varying solar wind conditions and levels of ionising solar radiation, so-called extreme ultraviolet (EUV) radiation.

The results show that the solar wind has a comparatively small effect on the ion escape rate, which instead mainly depends on the EUV radiation.

This has a large effect on estimations of the total amount of atmosphere that has escaped to space.

"Despite the stronger solar wind and EUV-radiation levels under the early Sun, ion escape cannot explain more than 0.006 bar of atmospheric pressure lost over the course of 3.9 billion years," said Ramstad.

"Even our upper estimate, 0.01 bar, is an insignificant amount in comparison to the atmosphere required to maintain a sufficiently strong greenhouse effect, about one bar or more according to climate models," he said.

The findings show that a stronger solar wind mainly accelerates particles already escaping the planet's gravity, but does not increase the ion escape rate.

Contrary to previous assumptions, the induced magnetosphere is also shown to protect the bulk of the Martian ionosphere from solar wind energy transfer.

## THE ASIAN AGE

Tue, 12 Dec, 2017

### **New immunotherapy to help fight cancer developed**

*A team led by an Indian-origin researcher has developed a novel cancer treatment.*

A team led by an Indian-origin researcher has developed a novel cancer treatment that genetically engineers a patient's immune system to attack cancer cells.

A study involving the recently approved CD19-targeting chimeric antigen receptor (CAR) T cell therapy shows that 42 per cent of patients with aggressive large B-cell lymphoma remained in remission at 15 months following treatment with axi-cel.

The study also reported measurable responses in 82 per cent of patients and complete responses in 54 per cent, researchers said.

Fifty-six per cent were alive at 15 months following therapy, with some remaining cancer free two years post-treatment, they said.

"With the FDA's recent approval of this therapy, we believe this is a major advance in the treatment of patients with relapsed or refractory large B-cell lymphoma and is likely to save or prolong lives of many patients," said Sattva Neelapu, professor at The University of Texas in the US.

"This study demonstrated that axi-cel provides remarkable improvement in outcomes over existing therapies for these patients who have no curative options," said Neelapu, who led the study published in The New England Journal of Medicine.

The study, which began in April 2015, administered axi-cel to 108 patients who had failed prior chemotherapy and autologous stem cell transplantation.

In some cases, the patients who had received chemotherapy were too far progressed to undergo stem cell transplantation and were placed on the trial following chemotherapy.

The patients' T-cells were extracted through a process called leukapheresis and genetically reengineered with CAR molecules that help T-cells attack cancer cells. The reengineered T cells are infused back into the patient.

"This is the first FDA-approved gene therapy to treat adult lymphoma. Axi-cel consists of the patients' own T cells that have been reprogrammed, and then reinfused to detect and destroy lymphoma," said Frederick Locke from Moffitt Cancer Center in the US.

"Many patients' lymphoma tumours melted away within a month. The long term follow-up results of the ZUMA-1 trial show that axi-cel remissions can last years, and these are patients that did not respond to chemotherapy," said Locke.

## पंजाब केसरी

Tue, 12 Dec, 2017

# एक्स-रे का इस्तेमाल करते हुए हीरे को ग्रेफाइट में बदला

वाशिंगटन, (भाषा): वैज्ञानिकों ने पहली बार एक्स-रे लेजर के अल्ट्रा शॉर्ट फ्लैसेज का इस्तेमाल करते हुए हीरे को ग्रेफाइट में बदलने में कामयाबी प्राप्त की है। अनुसंधानकर्ताओं के मुताबिक यह अध्ययन ठोस के ऊर्जा विकिरण को



अवशोषित करने पर उनके मूल व्यवहार में होने वाले परिवर्तन को समझने में मददगार साबित हो सकता है। अमेरिका के एसएलएसी नेशनल एक्सलेरेटर लैबोरेटरी के अनुसंधानकर्ता फ्रेंज तावेला सहित

अन्य अनुसंधानकर्ता ने पहली बार इस प्रक्रिया से हीरे को ग्रेफाइट में बदलने में सफलता हासिल की। हाई एनर्जी डेन्सिटी फिजिक्स जर्नल में यह अध्ययन प्रकाशित हुआ है। इसमें तावेला लिखते हैं, इन

बुनियादी पहलुओं के अलावा हीरा संबंधी तकनीकों के लिए इसके ग्रेफाइट में बदलने की प्रक्रिया को समझना बेहद जरूरी है क्योंकि हीरे का बड़े पैमाने पर व्यावहारिक इस्तेमाल होता है। हीरा और

ग्रेफाइन कार्बन के दो अलग-अलग रूप हैं और यह अपने आंतरिक क्रिस्टल संरचना में अलग होते हैं। धरती के नीचे गहराई में उच्च दबाव वाले चरणों में हीरे का निर्माण होता है।