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Universal college of engineering

Gujarati Linguistic Minority Institution

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ASHTAG

Applied Science and Humanities Department

VISION

The Department of Applied Science and Humanities is committed to dynamically integrate the components of Science, Humanities and Engineering to groom students to transform them as globally acknowledged professionals.

MISSION

The department is carrying a mission to create and disseminate the knowledge and techniques in intellectual areas of Engineering and other core areas of Applied Science and Humanities for betterment of Eco system.

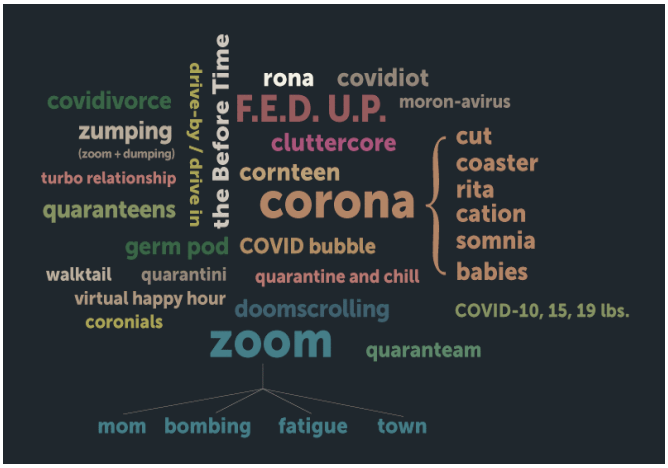
To inculcate the importance of Applied Science and develop a natural flair for Engineering and Technology which in turn shall mold students into a competent professional.

To be recognized for practicing the best teaching-learning processes to create highly competent, resourceful, and self-motivated young Engineers for the benefit of the society.

Speaking about the 'new normal': How language innovation helps us cope with crises

As the world comes to grips with the "new normal" coronavirus has wrought on our towns, cities and communities, society faces the challenge of figuring out how to talk about the impact the virus is having on our everyday lives.

Coronavirus has led to an explosion of new words and phrases, both in English and in other languages. This new vocabulary helps us make sense of the changes that have suddenly become part of our everyday lives.



Established terms such as "self-isolating," "pandemic," "quarantine," "lockdown" and "key workers" have increased in use, while coronavirus/COVID-19 neologisms are being coined quicker than ever.

These include "COVIDiot" (someone ignoring public health advice), "COVIDeo party"(online parties via Zoom or Skype), and "covexit" (the strategy for exiting lockdown), while coronavirus has acquired new descriptors—including "the 'rona" and "Miley Cyrus" (Cockney rhyming slang).

Other terms deal with the material changes in our everyday lives, from "Blursday" (an unspecified day because of lockdown's disorientating effect on time), to "zoombombing" (hijacking a Zoom videocall). "WFH" (working from home) and "quaranteams" (online teams created during lockdown) are helping people deal with changing work circumstances.

This is to say nothing of the metaphors people are using to talk about our response to Coronavirus, from war metaphors—for example, Boris Johnson's

briefing where he stated that: "This enemy can be deadly, but it is also beatable"—to sports, storms, monsters, natural disasters, and more.

Linguists are already starting to analyse these metaphors, while Veronika Koller of Lancaster University is crowdsourcing the non-war metaphors that people use (readers can contribute to this repository via Twitter using the #ReframeCovid hashtag).

Attention has also been paid to how effective different metaphors are in encouraging compliance with public health advice, as well as issues of translation, interpretation and access to healthcare.

While the scope of lexical innovation in relation to coronavirus is unprecedented, we only need to look to other periods of history to see how such linguistic creativity manifests itself in times of serious social crisis.

World War II gave us "radar" (RAdio Detection And Ranging) as well as "fubar" (Fucked Up Beyond All Recognition), "snafu" (Status Nominal: All Fucked Up, although Situation Normal All Fucked Up is also a common interpretation).

From Vietnam we got both "clusterfuck" (a mishandled or disorganized situation) and "fragging" (the deliberate killing of an unpopular member of one's own fighting unit, from the shortening of fragmentation grenade).

More recently, the UK's departure from the EU (colloquially known as "Brexit") gave us a variety of terms including "brexiteers," "remoaners," and "regrexit"—while conversations were dominated by new concepts such as "backstops," "hard borders," and "cliff edges."

For major health pandemics, the lasting effect on language is usually that the name of the disease enters common parlance, as happened with Human Immunodeficiency Virus (HIV), Acquired Immune Deficiency Syndrome

(AIDS), Spanish Flu (1918-1920), SARS (2002-2004), Swine Flu (2009) and others. But coronavirus has flipped the script and appears to be influencing public discourse beyond simply adding a new disease to the dictionary.

Perhaps one of the biggest factors in the spread of coronavirus terminology is the fact that we're more digitally connected than ever before—in a way we weren't during the SARS outbreak in 2002 or the Swine Flu outbreak in 2009. Instant access social media is now an integral part of our lives—and we share content with friends and family through a variety of social media outlets. The scale of our online connections means that there are now far more opportunities for individuals to coin a new term and share it beyond their immediate local communities.

In times of significant social or civic change, linguistic creativity not only reflects the major preoccupations of the time, but also shows how people gather to talk about new challenges and contexts. As coronavirus rages on, understanding the language surrounding it will be ever more important.

By Robert Lawson, The Conversation

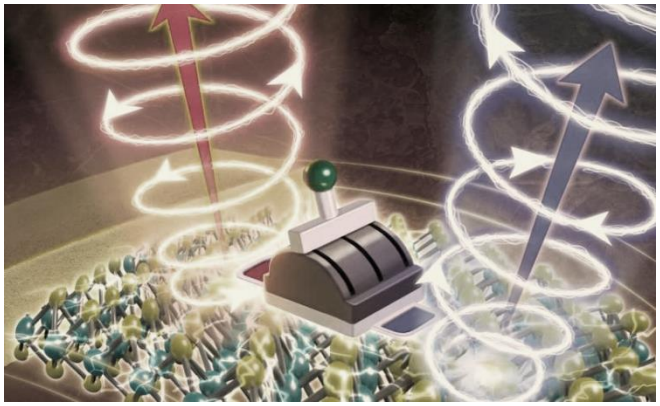
Contributed by: Marina Thomas

Source link: *https://medicalxpress.com/news/2020-04-language-cope-crises.html*

Future of quantum information processing: Twisting light that switches direction at room temperature

Scientists have generated circularly polarized light and controlled its direction without using clunky magnets or very low temperatures. The findings, by Nagoya University researchers and colleagues in Japan, and published in the journal Advanced Materials, show promise for the development of materials and device methods that can be used in optical quantum information processing.

Light particles called photons have interesting properties that can be exploited for storing and transporting data, and show tremendous promise for use in quantum computing.



For this to happen, information is first stored in electrons that then interact with matter to generate data-carrying photons. Information can be encoded in the direction of an electron's spin, just as it is stored in the form of 0 and 1 in the 'bits' of computers . Data can also be stored when electrons occupy 'valleys' found in the energy bands they move between while they orbit an atom. When these electrons interact with specific light-emitting materials, they generate twisting 'chiral' 'valley-polarized light,' which shows potential for storing large amounts of data.

So far, however, scientists have only managed to generate this type of circularly polarized light using magnets and very cold temperatures, making the technique impractical for widespread use.

Nagoya University applied physicists Taishi Takenobu and Jiang Pu led a team of scientists to develop a room-temperature, electrically controlled approach for generating this chiral valley-polarized light.

First, they grew a monolayer of semiconducting tungsten disulfide on a sapphire substrate and covered it with an ion-gel film. Electrodes were placed on either end of the device and a small voltage was applied. This generated an electric field and ultimately produced light. The team found that chiral light was observed between -193 degrees Celsius and room temperature from the portions of the device where the sapphire substrate was naturally strained as a result of the synthetic process. It could only be generated from the strain-free areas, however, at much colder temperatures. The scientists concluded that strain played a crucial role in generating room temperature valley-polarized light.

They then manufactured a bending stage on which they placed a tungsten disulfide device on a plastic substrate. They used the bending stage to apply strain to their material, driving an electric current in the same direction of the strain and generating valley-polarized light at room temperature. Applying an electric field to the material switched the chiral light from moving in one direction to moving in the other.

"Our use of strained monolayer semiconductors is the first demonstration of a light-emitting device that can electrically generate and switch right- and left-handed circularly polarized light at room temperature," says Takenobu.

By Nagoya University

Contributed by: Neha Shah

Source link:*https://phys.org/news/2021-09-future-quantum-room-temperature.html*

Cosmic concrete developed from space dust and astronaut blood

Transporting a single brick to Mars can cost more than a million British pounds—making the future construction of a Martian colony seem prohibitively expensive. Scientists at The University of Manchester have now developed a way to potentially overcome this problem, by creating a concrete-like material made of extra-terrestrial dust along with the blood, sweat and tears of astronauts.

In their study, published today in Materials Today Bio, a protein from human blood, combined with a compound from urine, sweat or tears, could glue together simulated moon or Mars soil to produce a material stronger than ordinary concrete, perfectly suited for construction work in extra-terrestrial environments.

In an article published on 13 September 2021 in the journal Materials Today Bio, scientists demonstrated that a common protein from blood plasma—human serum albumin—could act as a binder for simulated moon or Mars dust to produce a concrete-like material. The resulting novel material, termed AstroCrete, had compressive strengths as high as 25 MPa (Megapascals), about the same as the 20–32 MPa seen in ordinary concrete.

However, the scientists found that incorporating urea—which is a biological waste product that the body produces and excretes through urine, sweat and tears—could further increase the compressive strength by over 300%, with the

best performing material having a compressive strength of almost 40 MPa, substantially stronger than ordinary concrete.

Dr. Aled Roberts, from The University of Manchester, who worked on the project, said that the new technique holds considerable advantages over many other proposed construction techniques on the moon and Mars.

Animal blood was historically used as a binder for mortar. "It is exciting that a major challenge of the space age may have found its solution based on inspirations from medieval technology," said Dr. Roberts.

By University of Manchester

Contributed by: Shivam Shukla
Source link: *https://phys.org/news/2021-09-cosmic-concrete-space-astronaut blood.html*

Highlights of Admission process: SOP and Code of Conduct for Admission Counseling

Applied Science and Humanities Department has always been at the forefront when it comes to dealing with the admission process and admission counseling and there is no difference in that this year too. The details that are given below is a witness of the departments endeavor to ensure efficient and smooth functioning of the admission process.

Code of conduct

1. To ensure that all branches take part in the process of admission, a detailed time-table has been prepared assigning duties to faculty members to take charge of admission counseling on a given date.

2. Faculties on Duty should be there for the whole time for the allotted time, if not possible mutually adjust someone else of the same Department.
3. Faculties from 2nd slot should report sharp at 1 pm, and Faculties from 1st slot should leave only when 2nd slot people join the Duty.

Standard operation Procedure

A detailed document regarding the steps to be taken during the admission procedure was circulated to all faculties managing the admission process. The details of which are given below.

1. The admission counseling rounds at Universal College of Engineering's campus should start after the HSC Results are out.
2. All members should start calling the available database after the HSC Results are out and start getting appointments. Students and/or parents can be requested to visit campus to get the counseling done in detail keeping all precautions in mind and act.
3. Whenever a Student comes for Enquiry for FE, get his entry filled in register and get the Admission enquiry form filled in Tab.

4. Check the Eligibility of Student asking HSC Mark's and appearance for CET/JEE.

5. Inquire whether a Student has done the CET Registration or not? If done then tentative CET dates are 4th to 10th September and 14th to 20th September. If the Registration is not done for CET then the Student should enquire in CET Cell whether the Registration dates will further be extended or not?

6. Faculty members were asked to note the admission process which given as follows:

   A. Note students eligibility which is as follows:
      - A minimum of 45% marks by reserved category students and 50% marks by general category students in PCM or PMVoc/2(It will be revised as per the updated Guidelines of Government of Maharashtra.)
      - Non zero score in MH-CET
      - Outside Maharashtra students must have non zero JEE score

   B. Online Centralized Admission Process(CAP)
      - Login I'd and Password on www. mahacet.org 2021.
      - Step II-Student needs to upload all the mentioned Documents through his Login and get it verified Online through e scrutiny Centre after which he/ she will receive an acknowledgement receipt.
      - Students Visiting the College for Admission should carry the Following Documents:

        1. SSC Mark sheet,
        2. HSC Mark sheet
        3. HSC Leaving Certificate

4. MHT CET Score Card
5. JEE Score Card
6. Seat Acceptance Letter
7. Birth Certificate or Domicile Certificate
8. 3 Passport Sized Colored photographs
9. 1000/- Rs for Admission form.

- Step III- Student needs to fill the Option Form where he/ she gets 200 options in which he should select ours College with DTE Code 3460 as the First one so that there are maximum chances of Allotment.
- Step IV- Once the Student is allotted Seat in our College, he/she should pay the seat acceptance fee of Rs. 1000/- Online and should report to College with Seat Acceptance Letter, Other documents and Fees for Confirming Admission

C. Institute Level Admission

- Step I and Step II are common as above.
- Step III- Eligible Student can directly come with Documents and Fees and can confirm the Admission.

  Note: For Institute level Admission, there is no leverage given in terms of Fess, there are no Scholarships, even for a Caste/ Category Student, Fees will be of Open Category.
- Category cut off for SC, ST, NT, OBC (EBS as well) can be considered for Inst admission, but NOT FOR EWS

7. Regarding Installments in fees, there should not be any comments made by the Committee member, the decision and call will be taken by Campus Director Sir.

8. After the above procedure the student should be given a Walkthrough of the Entire Campus. For Walkthrough, it will be a moral responsibility of every Faculty to go on an alternate basis irrespective of the Branch.

A special counseling session was conducted to for engineering aspirants who

has come to college for enquiry. They were given detailed presentations by faculty members belonging to the various engineering branches available in the college. They were also informed about the process of admissions and their queries in this area were addressed.

Contributed by: Shivam Shukla

Compiled by: Marina Thomas

Edited and compiled by Marina Thomas.

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