

TECHNOLOGY ROUNDUP

A NEWS BULLETIN

Technology Information Services Section (TIS)
Pakistan Scientific & Technological Information Centre



PASTIC

Vol.12 No 5

September-October, 2020

Editorial Board

Executive Editor

Prof. Dr. Muhammad Akram Shaikh
Director General, PASTIC

Managing Editor

Dr. Saima Huma Tanveer
Editor

Dr. Syed Aftab Hussain Shah

Composer

Kashif Farooqui

Tech News Headlines

- **Pakistan's First Facility for manufacturing of Heart Stents and other Medical Devices at NUST**
- **Pakistan's First Electric Bike Sharing Service Launched at NIC Islamabad**
- **SugarCRM Adds AI to Sweeten the Customer Experience Pot**
- **New 3-D model of a DNA-regulating complex in human cells provides Cancer clues**
- **Loneliness predicts development of type 2 Diabetes**
- **This 'Squidbot' Jets around and takes pics of Coral and Fish**
- **This Tiny Device can Scavenge Wind Energy from the Breeze during walk**

Tech & Trade Offers

Volta Batteries



Forthcoming Tech Events

- **International Conference on Rehabilitation Science**
- **International Virtual Conference on Internet of Things**
- **International Conference on Engineering & Technology**
- **International Conference on Science Technology and Management**
- **3rd International Conference on Multidisciplinary Research**
- **3rd International Conference on Research in Science, Engineering & Technology**
- **International Conference on Science & Technology Research**
- **International Congress on History of Science and Technology**

PASTIC National Centre
Quaid-i-Azam University Campus
P.O. Box 1217, Islamabad

Phone: 051-9248103-4, 9248128

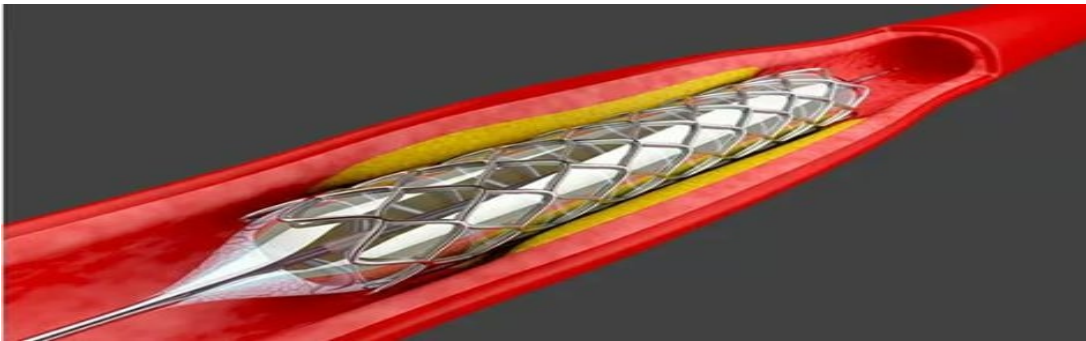
Fax: 051-9248113

Email: tis.pastic@gmail.com

Web: www.pastic.gov.pk

PAKISTAN'S FIRST FACILITY FOR MANUFACTURING OF HEART STENTS AND OTHER MEDICAL DEVICES AT NUST

N-ovative Health Technologies (NHT) – Pakistan's first facility for indigenous manufacturing of cardiac stents, angioplasty balloon catheters and other life-supporting medical devices –has been inaugurated by H.E. Prime Minister Imran Khan on October 16th, 2020 at the National University of Sciences & Technology's (NUST) Islamabad campus.



Credit: <http://www.nust.edu.pk/INSTITUTIONS/Colleges/PNEC/News/Pages/NUST---Production-of-Cardiac-Stents.aspx>

With the establishment of NHT, Pakistan has become the 18th country in the world, and second Muslim country in the world after Turkey, to have its own facility for cardiac stent production. As per the World Health Organization (WHO), Pakistan stands 18th in the world to have maximum deaths per year due to coronary diseases and falls in the Red Alert Zone. This precarious situation is largely due to exorbitant prices of imported cardiac implants, which over 80 percent patients find inaccessible. The establishment of NHT will not only bring quality stents within the reach of these patients, but also save huge sums of foreign exchange every year for the national exchequer.

Prime Minister commended NUST for accomplishing this huge national project that will give a significant boost to the country's health sector, adding that the initiative is in line with the Government's prime objective of attaining self-sustainability. Federal Minister for Science & Technology Chaudhry Fawad Hussain extolled NUST for once again delivering a gigantic project that has been engineered to revolutionise the country's health sector.

NHT is an ISO 13485: 2016 certified facility accredited by European Commission Notified Body and approved by Drug Regulatory of Pakistan (DRAP). To begin with, NHT has launched three of its major products, including REJUVENATE – Bare Metal Stents (BMS), N-DEAVOUR – Drug Eluting Stents (DES), and VASOGLIDE – PTCA Balloon Catheters. NHT has also made another phenomenal breakthrough by manufacturing “N-SAVIOUR,” a ventilator system against the backdrop of COVID-19, which will be used to treat patients with chronic respiratory issues.

Courtesy:

www.nust.edu.pk/News/Pages/Prime-Minister-inaugurates-Pakistans-first-facility-for-manufacturing-of-heart-stents-and-other-medical-devices-at-NUST.aspx

Pakistan's First Electric Bike Sharing Service Launched at NIC Islamabad

Roamer Technologies, a National Incubation Center (NIC) Islamabad startup, has launched “ezBike”, Pakistan's first electric bike sharing service on October 14, 2020 powered by Jazz sims for connectivity, to revolutionize transportation in urban areas. The Islamabad-based startup announced the news at a launch event at National Incubation Center which was graced by Syed Amin Ul Haque Federal Minister for IT & Telecom and dignitaries from government, technology sector.



Credit: APP63-14 ISLAMABAD: October 14 - Federal Minister for IT and Telecommunication Syed Amin Ul Haque in a group photo during the launching ceremony of Ezbike at National Incubation Center. APP photo by Irshad Sheikh.

ezBike is an app-based service which deploys electric bikes conveniently around the city and makes them available for use by the general public. Users can locate and reserve an electric bike parked near them using the ezBike mobile app, ride it themselves to their destination and park it in a designated zone, after which it becomes available for the next user to ride. The entire experience from registration to booking and payment is digital. Users pay Rs.5 to unlock the bike and Rs.5 per minute on their ride. Rides can also be paused so that users can stop and run errands while paying a reduced rate of Rs.2 per minute. Ezbike has partnered with Jazz through Jazz xlr8 to provide connectivity through Jazz sims and promote ease of payments through JazzCash. Syed Amin Ul Haque, Minister for IT & Telecom, said: “It is a proud moment for Pakistan that innovative companies like ezBike are being launched in Pakistan. The future of Pakistan lies in information technology and without tech innovation we cannot progress. Electric vehicle technology is the biggest game changer for the mobility market and our government will support startups that want to leverage this technology. Earlier, Mohammad Hadi, CEO of Roamer Technologies, said: “Only 10% of the Pakistani population owns a vehicle and mobility is still a largely unsolved problem. With ezBike we are providing access to shared vehicles to every individual in Pakistan. This is the next wave of disruption in mobility. It will be the most cost-effective, convenient, and environmentally-friendly mode of transportation in Pakistan. Bike sharing companies are revolutionizing urban transportation globally, with over 100,000 bikes deployed across 88 cities today. Roamer Technologies plans to deploy over 2,000 electric bikes within the next year and bring millions of dollars of Foreign Direct Investment (FDI) into Pakistan. By launching Pakistan's first bike sharing company, first electric Bike service, and first tech enabled self-drive service, the startup will provide tremendous value to middle-class Pakistanis while delivering huge social and economic impact to the country. CEO Ignite Syed Junaid Imam said that launch of ezBike service is not only great business innovation but also an opportunity for real impact on our society. He said this launch will jumpstart Pakistan's electric vehicle industry since these electric bikes will be manufactured in Pakistan.

Source:

www.ignite.org.pk/newsbites

SugarCRM Adds AI to Sweeten the Customer Experience Pot



SugarCRM last month announced its acquisition of Node Inc., an artificial intelligence (AI) platform that leverages customer relationship management data and vast external sources. This marks the fourth acquisition by SugarCRM since the company's investment by Menlo Park-based Accel-KKR in August 2018.

The three previous acquisitions of Collabspot, Salesfusion, and Corvana are part of SugarCRM's collective services for two million enterprise users across 120 countries. The newly acquired technology capabilities from Node could be the ultimate solution to the big data problem CRM platforms face -- and will fuel Sugar's time-aware customer experience (CX) platform. The bolstered technology will usher in the new paradigm of HD-CX -- High-Definition Customer Experience -- by bringing greater fidelity to CRM. It will also contribute to the platform by automatically forecasting expected outcomes and highlighting previously unforeseen challenges and opportunities. Time-aware technology is the long-awaited innovation that will hopefully solve the lingering fail point of conventional CRM software.

SugarCRM is the only customer experience platform built on an advanced event stream database that records every change event in the customer journey and then predicts future outcomes. Having a full historical view enables time-aware insights, such as the average time that leads spend in each stage of the pipeline, comparing current sales performance to any past period, and knowing when current performance is outside of historical norms.

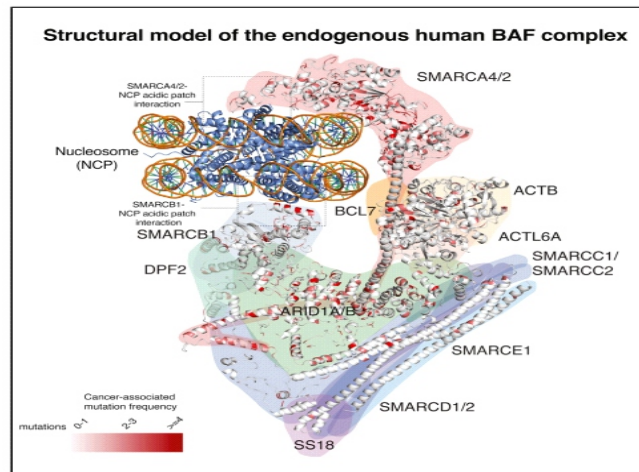
SugarCRM also extends time-awareness into the future through AI-based predictions. Accurate predictions enable companies to make better business decisions, manage risk, and identify and respond to problems and opportunities more quickly. That gives companies rich insight into the past, present, and future of their customers and customer-facing business processes. SugarCRM's AI performance delivers exceptional predictions, even with limited or incomplete CRM data. It considers factors in its predictions that simply are not represented in the CRM. By embedding AI into our core products, SugarCRM enables customers to avoid the time, cost, and technical expertise required by competitive AI solutions.

Source:

www.technewsworld.com/story/86836.html

New 3-D model of a DNA-regulating complex in human cells provides Cancer clues

Scientists have created an unprecedented 3-dimensional structural model of a key molecular 'machine' known as the BAF complex, which modifies DNA architecture and is frequently mutated in cancer and some other diseases.



Credit: Mashtalir et al., 2020. Cell, 2020; DOI: 10.1016/j.cell.2020.09.051

This novel model represents the most complete picture of the human BAF complex achieved to date. The BAF complex is molecular machine," a group of proteins that remodel the way DNA is packaged in cells. It is made up of a dozen protein subunits specified by 29 different genes. The new findings provide a critical foundation for understanding human disease-associated mutations in components of the BAF complex, which are present in over 20% of human cancers and in several intellectual disability and neurodevelopmental disorders. These insights could help scientists understand how mutations in proteins making up the complex lead to disruption of the normal regulation of DNA and hence the expression of genes in cells, potentially causing cancerous growth of cells to form tumors. Mutations in the BAF complex, for example, are the sole cause of rare childhood cancers such as synovial sarcoma and malignant rhabdoid, and contribute to common cancers such as ovarian and lung cancers.

BAF is one of several molecular "machines" that regulate the expression of genes in cells by modifying chromatin, a substance composed of DNA and protein. Using several powerful new analytic tools in combination, the investigators produced a model of the BAF complex's structure both as an isolated complex and in the form BAF takes when it binds to nucleosomes -- spool-like units of chromatin around which DNA segments are wound. BAF complex is made up of three modules which form a "C" shape and grip the nucleosome on opposite sides like a carpenter's C-clamp holds pieces of wood together. Scientists discovered that the two regions of the BAF structure that grip the nucleosome are "hot spots" where cancer-causing mutations frequently occur and used experiments to show how mutations disrupt the normal regulation of chromatin by BAF complexes. Mapping such mutations on the structure of the BAF complex and understanding their functional impact has remained a major, unmet goal of the field at-large for decades. This marks the beginning of an era in which we will be able to functionally "group" mutations that define specific tumor features and inform therapeutic opportunities.

Source:

www.sciencedaily.com/releases/2020/10/201013111309.htm

Loneliness predicts development of type 2 Diabetes

New research has shown for the first time that people over 50 who report higher levels of loneliness are more likely to develop type 2 diabetes later in life. The study shows that it is the absence of quality connections with people and not the lack of contact that predicts the onset of type 2 diabetes, suggesting that helping people form and experience positive relationships could be a useful tool in prevention strategies for type 2 diabetes. The results have implications in light of recent findings that people with diabetes are at greater risk of dying from COVID-19.

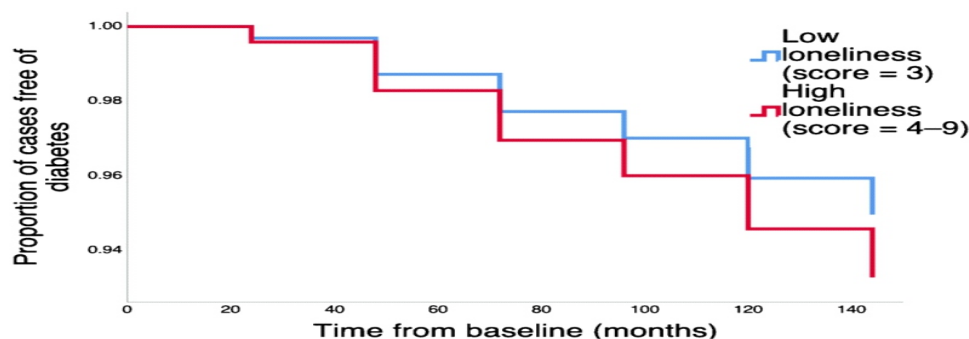


Fig. 2 Survival curve of loneliness on type 2 diabetes incidence

Credit: Hackett et al., 2020. DOI: [10.1007/s00125-020-05258-6](https://doi.org/10.1007/s00125-020-05258-6)

Loneliness occurs when an individual perceives that their social needs are not being met and reflects an imbalance between desired and actual social relationships. A fifth of adults in the UK and a third of adults in the USA have reported feeling lonely sometimes. The study analysed data from the English Longitudinal Study Ageing on 4112 adults aged 50 years and over which was collected at several times from 2002 to 2017. At the start of data collection all participants were free of diabetes and had normal levels of blood glucose. The study showed that over a period of 12 years 264 people developed type 2 diabetes, and the level of loneliness measured at the start of data collection was a significant predictor of the onset of type 2 diabetes later on in life. This relationship remained intact when accounting for smoking, alcohol, weight, level of blood glucose, high blood pressure and cardiovascular disease. The association was also independent of depression, living alone and social isolation.

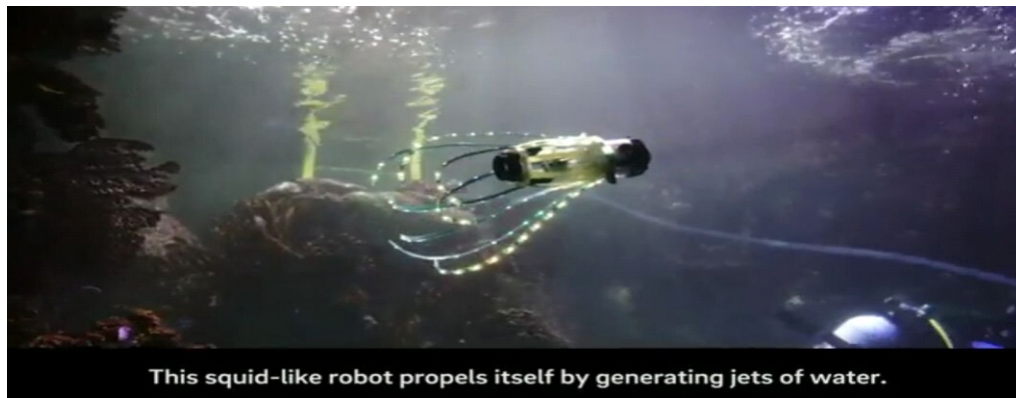
According to the study a possible biological reason behind the association between loneliness and type 2 diabetes could be the impact of constant loneliness on the biological system responsible for stress, which, over time affects the body and increases the risk for diabetes. Another explanation for the findings could be biases in our thinking that may perpetuate the association between loneliness and diabetes as when people feel lonely, they expect people will react to them negatively which makes it more difficult to form good relationships.

Source:

www.sciencedaily.com/releases/2020/09/200915105943.htm

This 'Squidbot' Jets around and takes pics of Coral and Fish

Engineers have built a squid-like robot that can swim untethered, propelling itself by generating jets of water. The robot carries its own power source inside its body. It can also carry a sensor, such as a camera, for underwater exploration.



Credit: <https://techxplore.com/news/2020-10-squidbot-jets-pics-coral-fish.html>

Scientists in fact recreated all the key features that squids use for high-speed swimming. This is the first untethered robot that can generate jet pulses for rapid locomotion like the squid and can achieve these jet pulses by changing its body shape, which improves swimming efficiency. This squid robot is made mostly from soft materials such as acrylic polymer, with a few rigid, 3D printed and laser cut parts. Using soft robots in underwater exploration is important to protect fish and coral, which could be damaged by rigid robots. But soft robots tend to move slowly and have difficulty maneuvering.

At rest, the squid robot is shaped roughly like a paper lantern, and has flexible ribs, which act like springs, along its sides. The ribs are connected to two circular plates at each end of the robot. One of them is connected to a nozzle that both takes in water and ejects it when the robot's body contracts. The other plate can carry a water-proof camera or a different type of sensor.

Researchers conducted several experiments to find the optimal size and shape for the nozzle that would propel the robot. This in turn helped them increase the robot's efficiency and its ability to maneuver and go faster. Scientists also learned more about how energy can be stored in the elastic component of the robot's body and skin, which is later released to generate a jet.

Source:

www.sciencedaily.com/releases/2020/10/201006165746.htm

This Tiny Device can scavenge Wind Energy from the Breeze during walk

Most of the wind available on land is too gentle to push commercial wind turbine blades, but now researchers have designed a kind of 'tiny wind turbine' that can scavenge wind energy from breezes as little as those created by a brisk walk. The method is a low-cost and efficient way of collecting light breezes as a micro-energy source.

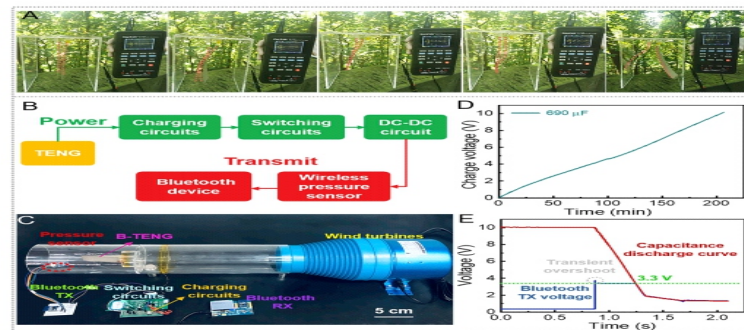


Figure 5. The Electric Capability of the Triboelectric Nanogenerator
 (A) The practicality of the B-TENG in an outdoor environment.
 (B) The mechanism of the self-powered pipe pressure monitoring system.
 (C) The picture of the self-powered pressure sensing system.
 (D) The charging curve of the self-powered system.
 (E) The discharge curve of the self-powered system.

Credit: Chen et al., 2020. DOI: 10.1016/j.xcrp.2020.100207

The new device is not technically a turbine. It is a nanogenerator made of two plastic strips in a tube that flutter or clap together when there is airflow. Like rubbing a balloon to your hair, the two plastics become electrically charged after being separated from contact, a phenomenon called the triboelectric effect. But instead of making your hair stand up like Einstein's, the electricity generated by the two plastic strips is captured and stored. A breeze as gentle as 1.6 m/s (3.6 mph) was enough to power the triboelectric nanogenerator.

The nanogenerator performs at its best when wind velocity is between 4 to 8 m/s (8.9 to 17.9 mph), a speed that allows the two plastic strips to flutter in sync. The device also has a high wind-to-energy conversion efficiency of 3.23%, a value that exceeds previously reported performances on wind energy scavenging. Currently, the research team's device can power up 100 LED lights and temperature sensors.

These devices can be placed where traditional wind turbines can't reach. We can install them in the mountains or on the top of buildings for sustainable energy.

Source:

www.sciencedaily.com/releases/2020/09/200923124720.htm

Forthcoming Tech Events

Pakistan

International Conference on Rehabilitation Science

28-29 November, 2020

Rawalpindi

[www.iser.co/conference 2020](http://www.iser.co/conference%2020)

International Virtual Conference on Internet of Things

17-18 December, 2020

Islamabad

www.conferenceonline.net/Conference/89/IVCIT/

International Conference on Engineering & Technology

18 February, 2021

Karachi

<https://www.iirst.com/event/index.php?id=1318294>

International Conference on Science Technology and Management

28-29 July, 2021

Rawalpindi

www.astem.org/Conference2021/Pakistan/1/ICSTM/

International

3rd International Conference on Multidisciplinary Research

11-12 March, 2021

Melbourne, Australia

www.icmr.igrnet.org/101/australia

3rd International Conference on Research in Science, Engineering & Technology

11-13 March, 2021

Oxford UK

[www.icsthttps://www.icrset.org/](https://www.icrset.org/)

International Conference on Science & Technology Research

26-27 March, 2021

Singapore

www.straevents.org/conference/singapore

International Congress on History of Science and Technology

25-31 July, 2021

Czech Republic Prague

www.ichst2021.org

Tech & Trade Offers

Volta Batteries

An iso 9001 & iso 14001 certified company, we have been producing various types of automotive and inverter batteries, under the brand name of "VOLTA", for more than 19 years.

We have all types of Motorcycle Batteries ranging from 04 Amp to 10 Amp & Automotive Batteries ranging from 32 Amp to 240 Amp. We take pride in being the only Local Manufacturer of all types of Maintenance Free Batteries, ranging from 32 Amp to 200 Amp. We are the only Local Manufacturer of Tubular Plate Batteries.

- ✍ Completely sealed battery
- ✍ Rugged ABS construction
- ✍ Suitable for Solar panels
- ✍ Auto control equipment
- Telecommunication position
- Cloud work in extreme climate condition
- ✍ Volta Solar Battery, produced for the first time in Pakistan.



Contact:-

Head Office House # 2, Street # 63, Sector F-8/4, Islamabad, Pakistan

Tel: +92-51-11122-00-22

Fax: +92-51-2855164

www.volta.com.pk

About PASTIC

PASTIC serves as a gateway for Scientific & Technological Information for R&D by catering to the information needs of researchers, entrepreneurs, industrialists, educationists, policy makers and planners through anticipatory and responsive information services.

Technology Information Section works exclusively for support and promotion of technological information on trade and industry in the country. "Technology Roundup" is a news bulletin that provides latest and innovative technology news, forthcoming events, etc. It also promotes products, technologies and services globally in sectors such as Agro-Industry, Bio-Technology, Building Material, Business, Chemicals, Electronics, Energy, Fisheries, Food Processing, Machinery, Packaging, Mining Pharmaceuticals and Textiles.

Please give us your feedback and address queries to tis.pastic@gmail.com