

WORLD  
world**Nuclear fuel removed from crippled Japan plant**

Tokyo, Japan

The operator of Japan's crippled Fukushima power plant on Monday began removing atomic fuel from inside a building housing one of the reactors that melted down in 2011.

The delicate operation represents the first time the Tokyo Electric Power Co (TEPCO) has pulled out fuel from inside a highly contaminated building containing the melted-down reactor, and comes four years behind schedule.

Due to high radiation levels, technicians used remote-controlled equipment to haul fuel from a "storage pool" inside the building.

Operations were briefly suspended early Monday afternoon after a problem with the equipment removing the fuel, but resumed shortly afterwards.

TEPCO estimates it will take two years to remove 566 units of nuclear fuel, most of which are already spent.

**Chinese pharmaceutical plant accident kills 10**

Beijing, China

Ten people suffocated to death by smoke inhalation at a large Chinese pharmaceutical firm yesterday, state media reported, the latest in a spate of deadly industrial incidents across the country.

Sparks from a pipe being welded at Qilu Tianhe Huishi Pharmaceutical Co. in eastern Shandong province caused a substance to catch fire and give off the smoke, state news agency Xinhua reported.

Twelve rescue workers were hurt but were not in life-threatening condition, it added.

**Canada targets Maduro with more sanctions**

Ottawa, Canada

Canada announced a fourth round of sanctions against Venezuelan President Nicolas Maduro's regime on Monday in response to what it described as its continued "anti-democratic actions."

The 43 people targeted by the new measures -- which include asset freezes and dealings prohibitions -- are "responsible for the deteriorating situation in Venezuela," Foreign Minister Chrystia Freeland said in a statement.

**Protestors step up pressure in Sudan**

AFP | Khartoum, Sudan

Sudan's military rulers faced pressure from demonstrators and Western governments to hand power to a new civilian government yesterday as activists warned of an attempt to disperse a 10-day-old mass protest outside army headquarters.

Thousands remained camped outside the complex in Khartoum overnight after protest leaders issued demands to the military council set up following the ouster of veteran president Omar al-Bashir.

The organisation that spearheaded the months of protests leading to Bashir's fall, the Sudanese Professionals Association, called on their supporters to boost the numbers at the complex.

"There is an attempt to disperse the sit-in from the army headquarters area, they are trying to remove the barricades," the SPA said in a statement, without saying who was responsible.

"We call on our people to come immediately to the sit-in



Sudanese demonstrators surround soldiers as they gather near the military headquarters in the capital Khartoum

area to protect our revolution."

Witnesses said several army vehicles had surrounded the area and that troops were seen removing the barricades which demonstrators had put up as a security measure.

Britain's ambassador to Khartoum, Irfan Siddiq, met the new military council's deputy and stated his "top request was no violence and no attempt to forcibly break the sit in".

In the meeting with Mohammad Hamdan Daglo, widely known as Himeidti, Siddik wrote on Twitter that he also backed the SPA's call for a civilian administration.

The talks came a day after the embassies of Britain, the United States and Norway issued a joint statement saying the "legitimate change" the Sudanese people demanded had not taken place.

"It is time for the transitional military council and all other parties to enter into an inclusive dialogue to effect a transition to civilian rule," they said.

The SPA has said a transitional government and the armed forces must bring to justice both Bashir and officials from his feared National Intelligence and Security Service (NISS).

**China using AI to identify Uighurs across China: NYT**

Hong Kong, China

Chinese authorities are using a vast system of facial recognition technology to track its Uighur Muslim minority across the country, according to a story in the *New York Times*.

Beijing has already attracted widespread criticism for its treatment of Uighurs in the northwest region of Xinjiang, where up to one million members of mostly Muslim Turkic-speaking minority groups are held in internment camps, according to estimates cited by a UN panel.

But according to a *Times* article on Sunday, facial recognition technology -- integrated into China's huge networks of surveillance cameras -- has been programmed to look exclusively for Uighurs based on their appearance and keep records of their movements across China.

Police are now reportedly using artificial intelligence (AI) technology to target Uighurs outside Xinjiang, including in wealthy cities like Hangzhou and Wenzhou. The newspaper claims one central city scanned whether residents were Uighurs 500,000 times in one month alone.

Beijing announced a plan in 2017 to become the world leader in the AI industry. But



Representative picture (Courtesy of Fortune)

there have been concerns in the international community that new smart technology is being used for heavy police surveillance in recent years after violent inter-ethnic tensions.

*The Times* cites experts who say this is the first known example of a government intentionally using AI for racial profiling, with appetite for the new systems growing in cities across the country.

In the central province of Shaanxi, authorities reportedly "aimed to acquire a smart camera system last year that 'should support facial recognition to identify Uighur/non-Uighur attributes'."

**3D print of heart with human tissue, vessels unveiled**

Tel Aviv, Israel

Scientists in Israel unveiled a 3D print of a heart with human tissue and vessels yesterday, calling it a first and a "major medical breakthrough" that advances possibilities for transplants.

While it remains a far way off, scientists hope one day to be able to produce hearts suitable for transplant into humans as well as patches to regenerate defective hearts.

The heart produced by researchers at Tel Aviv University is about the size of a rabbit's.

It marked "the first time anyone anywhere has successfully engineered and printed an entire heart replete with cells, blood vessels, ventricles and chambers," said Tal Dvir, who led the project.

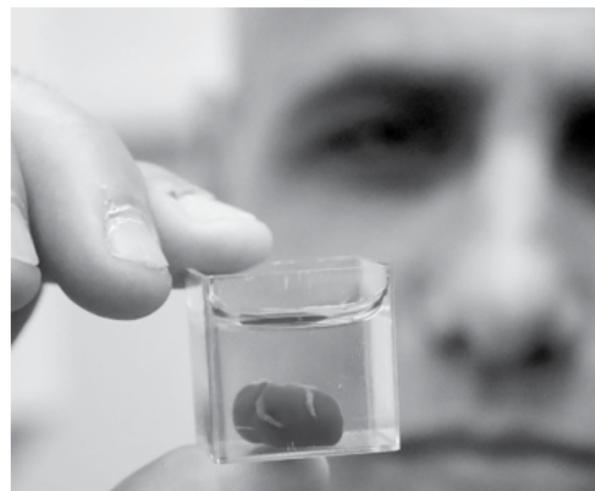
"People have managed to 3D-print the structure of a heart in the past, but not with cells or with blood vessels," he said.

But the scientists said many challenges remain before fully working 3D printed hearts will be available for transplant into patients.

Journalists were shown a 3D print of a heart about the size of a cherry at Tel Aviv University on Monday as the researchers announced their findings, published in the peer-reviewed journal *Advanced Science*.

Researchers must now teach the printed hearts "to behave" like real ones. The cells are currently able to contract, but do not yet have the ability to pump.

Then they plan to transplant



Israeli professor Tal Dvir presents a 3D print of heart with human tissue at the University of Tel Aviv

them into animal models, hopefully in about a year, said Dvir.

"Maybe, in 10 years, there will be organ printers in the finest hospitals around the world, and these procedures will be conducted routinely," he said.

But he said hospitals would likely start with simpler organs than hearts.

**Producing 'ink'**

In its statement announcing the research, Tel Aviv University called it a "major medical breakthrough."

A biopsy of fatty tissue was taken from patients that was used in the development of the "ink" for the 3D print.

First, patient-specific cardiac patches were created followed by the entire heart, the state-

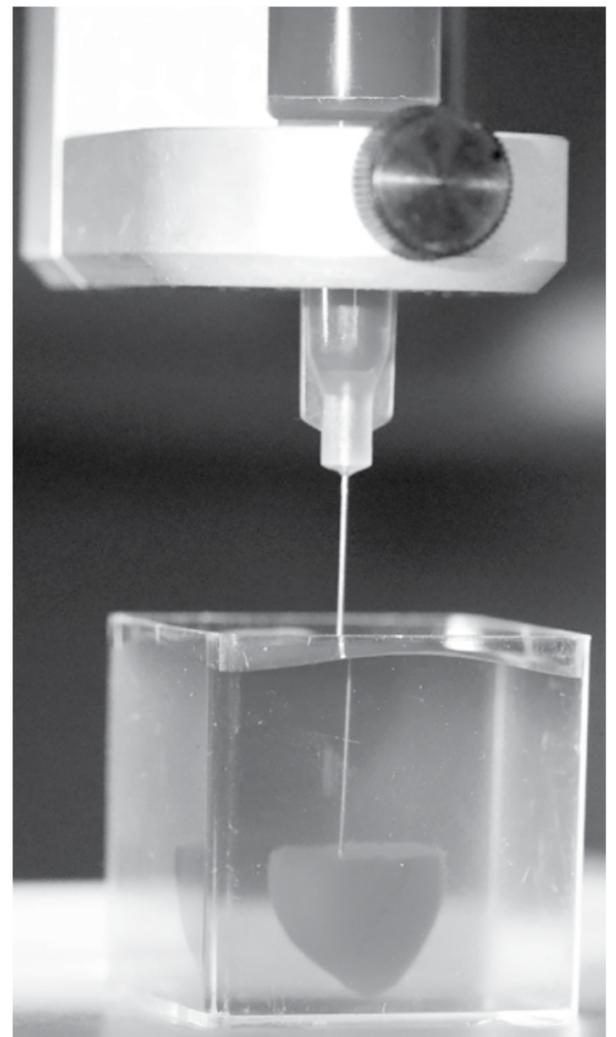
ment said. Using the patient's own tissue is important to eliminate the risk of an implant provoking an immune response and being rejected, Dvir said.

Challenges that remain include how to expand the cells to have enough tissue to recreate a human-sized heart, he said.

Current 3D printers are also limited by the size of their resolution and another challenge will be figuring out how to print all small blood vessels.

3D printing has opened up possibilities in numerous fields, provoking both promise and controversy.

The technology has developed to include 3D prints of everything from homes to guns.



This photo taken at the University of Tel Aviv shows a 3D print of heart with human tissue.