

Musk unveils project on mind-machine interface

Neuralink showcases an early version of a sensor with hair-thin strands that could be implanted in brain



Elon Musk. *AFP

AGENCE FRANCE-PRESSE
SAN FRANCISCO

Futurist entrepreneur Elon Musk late on Tuesday revealed his secretive Neuralink startup is making progress on an interface linking brains with computers, and said they hope to begin testing on people next year.

Mr. Musk has long contended that a neural lace meshing minds with ma-

chines is vital if people are going to avoid being so out-paced by Artificial Intelligence that, under the best of circumstances, humans would be akin to "house cats."

Mr. Musk and members of the Neuralink team laid out progress they have made on their mission at an event held in San Francisco to recruit talent in software, ro-

botics, neuroscience and more.

"Ultimately, we can do a full brain-machine interface," Musk said.

"Achieve a sort of symbiosis with artificial intelligence."

Neuralink unveiled an early version of a tiny sensor with hair-thin strands that could be implanted in a brain through a small incision by a

robot built for the high-precision task.

"They are tiny electrodes and the robot is delicately implanting them," Mr. Musk said, noting there could be thousands of the electrodes connected to a brain.

"This is something that is not going to be stressful to put in; will work well, and it is wireless."

The chip will communi-

cate wirelessly with an ear-piece, which relays information to a smartphone application. For now, the goal is to let a person with the implants control a smartphone with thought, but the technology could eventually extend to other devices such as robotic arms.

"We hope to have this in a human patient before the end of next year."

Ebola outbreak a global health emergency: WHO

AGENCE FRANCE-PRESSE
GENEVA

The World Health Organization on Wednesday declared the Ebola outbreak in the Democratic Republic of Congo a "public health emergency of international concern," a rare designation only used for the gravest epidemics.

The Ebola epidemic in DR Congo, the second deadliest on record, has largely

been contained to remote areas, but this week saw a patient diagnosed with the virus in the eastern city of Goma, the first case in a major urban hub.

"It is time for the world to take notice," WHO chief Tedros Adhanom Ghebreyesus said, as he invoked the emergency provision (PHEIC), activated by the UN health agency four times previously.

Menstrual cups are safe, reusable and cheap: study

They collect blood rather than absorb it

AGENCE FRANCE-PRESSE
PARIS

Inexpensive and reusable menstrual cups are safe and as unlikely as disposable pads or tampons to leak, according to the first major scientific review of the devices, published Wednesday.

Some 70% of women who have tried menstrual cups said they would like to continue using them, researchers reported in *The Lancet Public Health*, a peer-reviewed medical journal.

A safe, affordable and long-lasting alternative to pads and tampons, in other words, has the potential to change the lives of millions.

The new research – a review of 43 earlier studies gathering data on 3,300 women – is the first to evaluate menstrual cups.

Made from medical grade silicone, rubber or latex, the cups collect blood rather than absorb it, as pads and tampons do. They last from four to 12 hours.

There are two types: a so-called vaginal cup which is generally bell-shaped, and a cervical cup, which is placed around the cervix high in the vagina much like a diaphragm for contraception.

In four of the studies re-



A cup can last for up to 10 years, making it a cheaper alternative in the long run.

viewed, the cups were found to be as effective or better at collecting blood than sanitary pads or tampons.

The research showed no increased risk of infection. There were, however, five reported cases of toxic shock syndrome (TSS), a potentially life-threatening condition caused by bacteria getting into the body via foreign objects.

Since the overall number of menstrual cup users is unknown, researchers could not determine how this compared with tampons, known to boost the risk for TSS.

The cup is reusable and can last for up to ten years, making it cheaper in the long run than disposable alternatives.

Ingenious technique to eradicate mosquitoes

Uses 2 methods – radiation and bacteria

AGENCE FRANCE-PRESSE
TOKYO

A breakthrough technique harnessing two methods to target disease-carrying mosquitoes was able to effectively eradicate buzzing biters in two test sites in China, according to research published on Thursday.

The mosquitoes targeted are a type that is particularly difficult to control called *Aedes albopictus*, which are a major vector for diseases including Zika and dengue.

The study "demonstrates the potential of a potent new tool", wrote Peter Armbruster, a Professor at Georgetown University.

Researchers harnessed two population control methods: the use of radiation – which effectively sterilises mosquitoes – and a strain of bacteria called Wolbachia that leaves mosquito eggs dead on arrival.

They conducted a two-year trial at two sites on river islands in Guangzhou.

The results were "remarkable", wrote Prof. Armbruster. The number of



Mass rearing of mosquitoes in containers at a company in Guangzhou, China. AFP

hatched mosquito eggs plunged by 94%, with not a single viable egg recorded for up to 13 weeks in some cases.

And the average number of female mosquitoes – which transmit disease to humans – caught by traps fell by 83 to 94%.

The results were also borne out by a decline of nearly 97% in bites suffered by locals – which in turn shifted attitudes among residents, who were initially sceptical of the project's plan to release more mosquitoes into the local area.

optimises the geometry of the bat and helps it hit the ball harder and further.

The result is a high performing bat that an aspiring cricketer can get their hands on at maybe just \$30-40 and ultimately bring more talent into the sport, the scientists said.

According to Sadegh Mazloomi, who wrote the algorithms, the idea was to optimise the bat's geometry, specifically the back profile so as to minimise the vibration caused by ball's impact.

Now, an algorithm for an affordable cricket bat

PRESS TRUST OF INDIA
NEW DELHI

Using computer modelling and optimisation algorithms, the world's best bat and maybe the most affordable could in the near future roll out from a lab to the cricket ground.

A high performing 'Algotbat', closely resembling the finest in the market and at a fraction of the price, is in the works in Canada's University of British Columbia, where scientists have developed a novel algorithm that

TEMPORARY CANCELLATION / DIVERSION / PARTIAL CANCELLATION / REGULATION AND RESCHEDULING OF TRAINS DUE TO NON-INTERLOCKING WORK AT TILAK BRIDGE STATION

In order to further strengthen the infrastructure, Northern Railway will undertake the Non-Interlocking work at Tilak Bridge station in connection with 5th & 6th line between New Delhi and Tilak Bridge stations. To execute this work, Railways will take appropriate traffic blocks upto 22.07.2019. Consequently, the following trains will temporarily be affected on the dates shown against each:-

CANCELLATION OF TRAINS		
Train No. & Train Name	Date(s) of Cancellation (from originating station)	
12419/12420 Lucknow-New Delhi-Lucknow Gomati Express	19 to 21.07.2019	
12459/12460 New Delhi-Amritsar-New Delhi Express	19 to 21.07.2019	
14205 Faizabad-Delhi Jn. Express	18 & 19.07.2019	
14206 Delhi Jn.-Faizabad Express	19 & 20.07.2019	
14207 Paratapgarh-Delhi Jn. Padmavat Express	18 & 19.07.2019	
14208 Delhi Jn.-Paratapgarh Padmavat Express	19 & 20.07.2019	
14211/14212 Agra Cantt.-New Delhi-Agra Cantt. Intercity Exp.	19 to 21.07.2019	
14315/14316 Bareilly-New Delhi-Bareilly Intercity Express	19 to 21.07.2019	
14323/14324 New Delhi-Rohatak-New Delhi Express	19 to 21.07.2019	
14521/14522 Delhi Jn.-Ambala Cantt.-Delhi Jn. Express	19 to 21.07.2019	
14681/14682 New Delhi-Jalandhar City-New Delhi Express	19 to 21.07.2019	
15035/15036 Delhi Jn.-Ramnagar / Kathgodam-Delhi Jn. Uttaranchal Sampark Kranti Express	20 & 21.07.2019	
19565 Okha-Dehradun Uttaranchal Express	19.07.2019	
19566 Dehradun-Okha Uttaranchal Express	21.07.2019	
14085/14086 Tilak Bridge-Sirsa-Tilak Bridge Express	20, 21 & 22.07.2019	
64088 Hazrat Nizamuddin-New Delhi EMU	Upto 21.07.2019	
51911/51912 Delhi Jn.-Saharanpur-Delhi Jn. Passenger	19 & 20.07.2019	
54055/54056 Moradabad-Delhi Jn.-Moradabad Passenger	20.07.2019	
64012/64013/64014/64016 Shukur Basti-Palwal-Shukur Basti EMU	19 to 21.07.2019	
64018 Shukur Basti-New Delhi EMU	19 & 20.07.2019	
64031/64032/64034/64036 Ghaziabad-Shukur Basti-Ghaziabad EMU	19 to 21.07.2019	
64053 Palwal-Ghaziabad EMU	19 to 21.07.2019	
64071 Ballabgarh-Shukur Basti EMU	19 & 20.07.2019	
64075/64077/64078/64080 Palwal-New Delhi-Palwal EMU	19 to 21.07.2019	
64082 New Delhi-Palwal EMU	19 & 20.07.2019	
64087 Hazrat Nizamuddin-New Delhi EMU	19 to 21.07.2019	
64092 Hazrat Nizamuddin-Hazrat Nizamuddin EMU	19.07.2019	
64091 Hazrat Nizamuddin-Hazrat Nizamuddin EMU	19 to 21.07.2019	
64098 Shukur Basti-Hazrat Nizamuddin EMU	19.07.2019	
64093 Hazrat Nizamuddin-Shukur Basti EMU	19 to 21.07.2019	
64095 New Delhi-Shukur Basti EMU	19 & 20.07.2019	
64096 Shukur Basti-Hazrat Nizamuddin EMU	19.07.2019	
64097 New Delhi-Shukur Basti EMU	19 to 21.07.2019	
64401/64406/64408 Ghaziabad-Delhi Jn.-Ghaziabad EMU	20.07.2019	
64403 Ghaziabad-Delhi Jn. EMU	19 to 21.07.2019	
64089 Hazrat Nizamuddin-Hazrat Nizamuddin EMU	Upto 22.07.2019	
64411 Sahibabad-Delhi Jn. EMU	20.07.2019	
64412 Delhi Jn.-Ghaziabad EMU	19.07.2019	
64418 Delhi Jn.-Ghaziabad EMU	20.07.2019	
64423/64424/64425/64427/64430/64432 Ghaziabad-New Delhi-Ghaziabad EMU	19 to 21.07.2019	
64426 New Delhi-Ghaziabad EMU	20.07.2019	
64428 New Delhi-Ghaziabad EMU	19.07.2019	
64431 Ghaziabad-New Delhi EMU	19 & 20.07.2019	
64439 Ghaziabad-Delhi Jn. EMU	20.07.2019	
64445 Ghaziabad-Delhi Jn. EMU/64449/64450 Ghaziabad-New Delhi-Ghaziabad EMU/64469/64470 New Delhi-Panipat-New Delhi EMU	19.07.2019	
64491/64492 Palwal-New Delhi-Palwal EMU	19 & 20.07.2019	
64493/64494 Palwal-Hazrat Nizamuddin-Palwal EMU	20.07.2019	
64569/64570 Kosi Kalan-Hazrat Nizamuddin-Kosi Kalan EMU	20.07.2019	
64434 Delhi Jn.-Ghaziabad EMU	20.07.2019	
64420 Ghaziabad-Hazrat Nizamuddin EMU	19 to 21.07.2019	
64567/64568 Bulandshahr-Tilak Bridge-Bulandshahr EMU	20.07.2019	

DIVERSION OF TRAINS

Train No. & Train Name	Diverted via	Date(s) (from originating station)
12055 New Delhi-Dehradun Janshatabdi	Delhi Jn.	19.07.19
12171 Lokmanya Tilak (T)-Haridwar AC Superfast	Agra Cantt.-Mitawali-Aligarh-Khurja-Meerut City	18.07.19
12172 Haridwar-Lokmanya Tilak (T) AC Superfast	Meerut City-Khurja-Aligarh-Mitawali-Agra Cantt.	19.07.19
12204 Amritsar-Saharsa Garib Rath	Ambala-Saharanpur-Moradabad	20 & 21.07.19
12259 Sealdah-New Delhi Duronto Exp.	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	18.07.19
12260 New Delhi-Sealdah Duronto Exp.	New Delhi-Delhi Jn.-Delhi Shahdara-Sahibabad	19.07.19
12274 New Delhi-Howrah Duronto Exp.	Delhi Jn.	20.07.19
12392 New Delhi-Rajgir Shramjeevi Exp.	Delhi Jn.	19 to 21.07.19
12398 New Delhi-Gaya Mahabodhi Exp.	Delhi Jn.	19 to 21.07.19
12484 Amritsar-Kochuveli Express	Adarsh Nagar-Delhi Safdarjung-Okhla	21.07.19
12501 Guwahati-New Delhi Poorvotter Sampark Kranti Express	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	20.07.19
12561 Jaynagar-New Delhi Swatantra Sainani Express	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	19 & 20.07.19
12562 New Delhi-Jaynagar Swatantra Sainani Express	New Delhi-Delhi Jn.-Delhi Shahdara-Sahibabad	20.07.19
12566 New Delhi-Darbhanga Bihar Sampark Kranti Express	Delhi Jn.	19 to 21.07.19
12581 Manduadih-New Delhi Superfast	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	18 to 20.07.19
12582 New Delhi-Manduadih Superfast	New Delhi-Delhi Jn.-Delhi Shahdara-Sahibabad	20.07.2019
12715 H. Sahib Nanded-Amritsar Sachkhand Express	Okhla-Delhi Safdarjung-Adarsh Nagar	19 & 20.07.19
12903/12904 Mumbai Central-Amritsar-Mumbai Central Golden Temple Mail	Khutbav-Mathura Jn.-Alwar-Rewari-Delhi Jn.-Sahibabad	18.07.2019
14003 Malda Town-New Delhi Express	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	20.07.19
64095 New Delhi-Shukur Basti EMU	New Delhi-Delhi Kishanganj-Shukur Basti	Upto 22.07.19

Train No. & Train Name	Station	Date(s)
14258 New Delhi-Varanasi Kashi Vishwanth Express	Delhi Jn.	19 to 21.07.19
15708 Amritsar-Kaithar Express	Ambala-Saharanpur-Moradabad-Lucknow	19 & 20.07.19
18237 Gevra Road-Amritsar Chhatisgarh Express	Agra Cantt.-Mitawali-Aligarh-Khurja-Meerut City	18 & 19.07.19
18238 Amritsar-Gevra Road Chhatisgarh Express	Meerut City-Khurja-Aligarh-Mitawali-Agra Cantt.-	18 & 20.07.19
18507 Vishakapatnam-Amritsar Express	Okhla-Delhi Safdarjung-Adarsh Nagar	18 & 19.07.19
18508 Amritsar-Vishakapatnam Express	Adarsh Nagar-Delhi Safdarjung-Okhla	21.07.19
19023 Mumbai Central-Firozpur Cantt. Janata Express	Okhla-Delhi Safdarjung-Shukur Basti	19 & 20.07.19
19024 Firozpur Cantt.-Mumbai Central Janata Express	Shukur Basti-Delhi Safdarjung-Okhla	20 & 21.07.19
20801 Islampur-New Delhi Magadh Exp.	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	18 & 20.07.19
20802 New Delhi-Islampur Magadh Exp.	New Delhi-Delhi Jn.-Delhi Shahdara-Sahibabad	19 & 20.07.19
22125 Nagpur-Amritsar AC Express	Okhla-Delhi Safdarjung-Adarsh Nagar	20.07.19
22417 Varanasi-New Delhi Mahamana Exp.	Sahibabad-Delhi Shahdara-Delhi Jn.-New Delhi	18.07.19
22418 New Delhi-Varanasi Mahamana Exp.	New Delhi-Delhi Jn.-Delhi Shahdara-Sahibabad	19.07.19
22457 Hazur Sahib Nanded-Amb Andaura Superfast Express	Okhla-Delhi Safdarjung-Adarsh Nagar	20.07.19
11078 Jammu Tawi-Pune Jhelum Exp.	New Delhi-Tilak Bridge	18 & 19.07.19
51901 Agra Cantt.-Delhi Jn. Passenger	H. Nizamuddin-Delhi Shahdara-Delhi Jn.	20 & 21.07.19
12723 Hyderabad-New Delhi Telangana Exp.	Tilak Bridge-New Delhi	18.07.19
12033 Kanpur Central-New Delhi Exp.	Tilak Bridge-New Delhi	19.07.19
12056 Dehradun-New Delhi Janshatabdi	Tilak Bridge-New Delhi	19.07.19
12203 Saharsa-Amritsar Garib Rath Exp.	Tilak Bridge-New Delhi	18.07.19
64052 Ghaziabad-Palwal EMU	Sahibabad-H. Nizamuddin	19 to 21.07.19
64055/64057 Palwal-Ghaziabad EMU	H. Nizamuddin-Sahibabad-Ghaziabad	19 to 21.07.19
64109 Dankaur-Shukur Basti EMU	Sahibabad-Delhi Shahdara-Delhi Jn.	19 to 21.07.19
64167 Palwal-New Delhi-Tundla EMU	Sahibabad-Hazrat Nizamuddin	20.07.19
64419 Hazrat Nizamuddin-Ghaziabad EMU	Hazrat Nizamuddin-Sahibabad	Upto 21.07.19
64434 Delhi Jn.-Ghaziabad EMU	Delhi Jn.-Delhi Shahdara-Sahibabad	19 & 21.07.19
64443 Ghaziabad-New Delhi EMU	Sahibabad-Delhi Shahdara	19.07.19
64472/64534 Panipat-New Delhi-Ghaziabad EMU	Sabzi Mandi-Delhi Jn.-Delhi Shahdara-Sahibabad	19 to 21.07.19
64901 Kosi Kalan-Ghaziabad EMU	H. Nizamuddin-Sahibabad-Ghaziabad	19 to 21.07.19
64902 Ghaziabad-Kosi Kalan EMU	Sahibabad-Hazrat Nizamuddin	20.07.19
64903 Mathura Jn.-Ghaziabad EMU	H. Nizamuddin-Sahibabad-Ghaziabad	20 & 21.07.19
64904 Ghaziabad-Mathura Jn. EMU	Ghaziabad-Sahibabad-H. Nizamuddin	20.07.19
64168 Tundla-New Delhi-Palwal EMU	Sahibabad-H. Nizamuddin	21.07.19

PARTIAL CANCELLATION OF TRAINS

Train No. & Train Name	Short Terminate at/ Originate from	Partially Cancelled Between Stations	Date(s) from originating station
12523 New Jalpaiguri-New Delhi Exp.	at Moradabad	Moradabad-New Delhi	20.07.2019
12524 New Delhi-New Jalpaiguri Exp.	from Moradabad	New Delhi-Moradabad	21.07.2019
12625 Kerala Express	at H. Nizamuddin	H. Nizamuddin-New Delhi	19.07.2019
12626 Kerala Express	from H. Nizamuddin	New Delhi-H. Nizamuddin	21.07.2019
13413 Farakka Express	at Kanpur	Kanpur-Delhi Jn.	18.07.2019
13414 Farakka Express	from Kanpur	Delhi Jn.-Kanpur	20.07.2019
13483 Farakka Express	at Kanpur	Kanpur-Delhi Jn.	19.07.19
13484 Farakka Express	from Kanpur	Delhi Jn.-Kanpur	19 & 21.07.19
64017 Palwal-Shukur Basti EMU	at H. Nizamuddin	H. Nizamuddin-Shukur Basti	Upto 21.07.19
54767 Shri Ganganagar-Tilak Bridge Pass.	at Patel Nagar	Patel Nagar-Tilak Bridge	19 & 20.07.19
54768 Tilak Bridge-Shri Ganganagar Pass.	from Patel Nagar	Tilak Bridge-Patel Nagar	20 & 21.07.19
54769/54770 Tilak Bridge-Rohatak-Tilak Bridge Passenger	from / at Shukur Basti	Shukur Basti-Tilak Bridge-Shukur Basti	20 & 21.07.19
54474 Saharanpur-Delhi Jn. Pass.	at Sahibabad	Sahibabad-Delhi Jn.	19 to 21.07.19
54475 Delhi Jn.-Haridwar Passenger	from Noli	Noli-Delhi Jn.	19 to 21.07.19
54540 Ambala-H. Nizamuddin Pass.	at Meerut City	Meerut City-H. Nizamuddin	20.07.2019
54539 H. Nizamuddin-Ambala Pass.	from Meerut City	H. Nizamuddin-Meerut City	21.07.2019
64105 Aligarh-New Delhi EMU	at Sahibabad	Sahibabad-New Delhi	20.07.2019
64106 New Delhi-Aligarh EMU	from Ghaziabad	New Delhi-Ghaziabad	20.07.2019
64107 Dankaur-Delhi Jn. EMU	at Ghaziabad	Ghaziabad-Delhi Jn.	20.07.2019
64110 New Delhi-Aligarh EMU	from Sahibabad	New Delhi-Sahibabad	20.07.2019
64113 Khurja-Shukur Basti EMU	at Ghaziabad	Ghaziabad-Shukur Basti	19 & 21.07.19
64151 Aligarh-Delhi Jn. EMU	at Ghaziabad	Ghaziabad-Delhi Jn.	20.07.2019
64429 Ghaziabad-New Delhi EMU	at Sahibabad	Sahibabad-New Delhi	20.07.2019
64461/64462 Hazrat Nizamuddin-Kurukshetra-Hazrat Nizamuddin EMU	at / from New Delhi	New Delhi-Hazrat Nizamuddin-New Delhi	20.07.2019
64905 Mathura Jn.-New Delhi EMU	at Palwal	Palwal-New Delhi	19 to 21.07.19
64084 New Delhi-Palwal EMU	from H. Nizamuddin	H. Nizamuddin-New Delhi	Upto 21.07.19

REGULATION / RESCHEDULING OF TRAINS

Train No. 12627 Bangalore City-New Delhi Karnataka Express will be rescheduled by 120 minutes on 18.07.2019 from Bangalore City.

Train No. 12716 Amritsar-H. Sahib Nanded Express will be rescheduled by 120 minutes on 20.07.2019 & 180 minutes on 21.07.2019 from Amritsar.

Train No. 12925 Bandra (T)-Amritsar Ashram Express will be regulated on North Central Railway 30 minutes on 18.07.2019 & will be rescheduled by 120 minutes on 19.07.2019 from Bandra (T).

Train No. 16032 Shri Mata Vaishno Devi Katra-Chennai Central Andaman Express will be regulated for 45 minutes on 19 & 20.07.2019 at Sonarpur Jn.

Train No. 20503 Dibrugarh-New Delhi Rajdhani Express will be rescheduled by 60 minutes from Dibrugarh on 18.07.2019.

Train No. 20505 Dibrugarh-New Delhi Rajdhani Express will be rescheduled by 60 minutes from Dibrugarh on 19.07.2019.

Train No. 12625 Trivendrum Central-New Delhi Kerala Express will be regulated for 60 minutes over North Central Railway on 18.07.2019.

Note:- For any kind of information passengers are requested to contact Railway Enquiry No. 139 or visit Indian Railways website www.enquiry.indianrail.gov.in

Security Helpline No. 182 and Passengers Complaint Helpline No. 138