LabMedya

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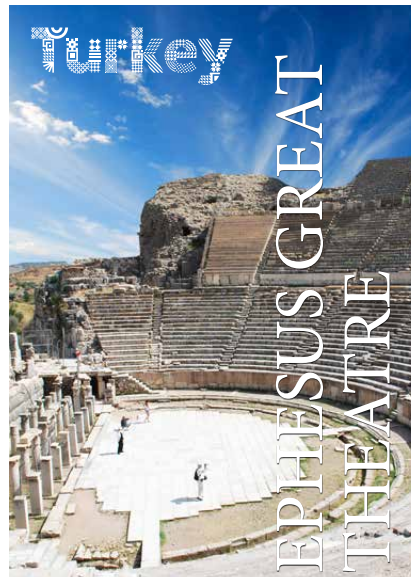

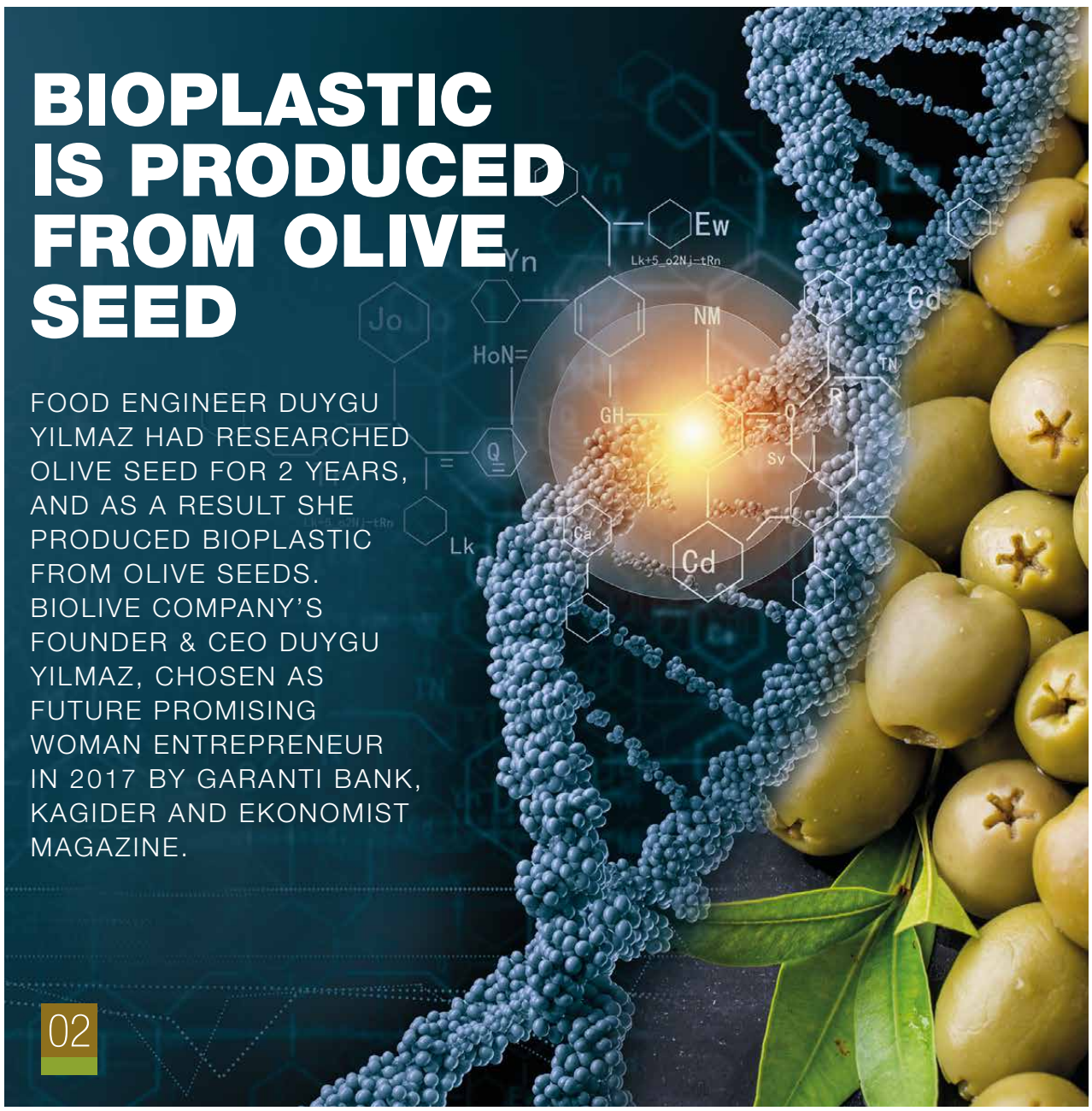

BIOPLASTIC IS PRODUCED FROM OLIVE SEED

FOOD ENGINEER DUYGU YILMAZ HAD RESEARCHED OLIVE SEED FOR 2 YEARS, AND AS A RESULT SHE PRODUCED BIOPLASTIC FROM OLIVE SEEDS. BIOLIVE COMPANY'S FOUNDER & CEO DUYGU YILMAZ, CHOSEN AS FUTURE PROMISING WOMAN ENTREPRENEUR IN 2017 BY GARANTI BANK, KAGIDER AND EKONOMIST MAGAZINE.

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FOREIGN TOURIST ARRIVALS IN TURKEY ROSE NEARLY 30 PCT IN 2017

The number of foreign tourists visiting Turkey rose 28 percent in the first 10 months of the year, hitting 29 million, mainly due to an ongoing rebound in the Russian market, data from Turkey's Tourism Ministry showed on Nov. 29.

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TURKISH SIGNATURE FOR GENETIC DIAGNOSIS OF HEMOPHILIA

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Hemophilia genetic test kit is the first time in the world was produced at the Faculty of Medicine of Ege University by Associate Professor Hüseyin Onay.

CHINA'S "SOCIAL CREDIT SYSTEM" WILL RATE HOW VALUABLE YOU ARE AS A HUMAN

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In a contentious world first, China plans to implement a social credit system (officially referred to as a Social Credit Score or SCS) by 2020.

TURKISH PROFESSOR EXCITES THE WORLD WITH THE CHOLESTEROL DISCOVERY

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The Sabri Ulker Center resarch team led by Professor Gökhan Hotamışlıgil at Harvard University, has developed a mechanism to protect cells from harmful effects of cholesterol.

ANESTHETICS HAVE SAME EFFECTS ON PLANTS AS ANIMALS & HUMANS

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A new study published in Annals of Botany shows that plants react to anesthetics similarly to the way animals and humans do, suggesting plants are ideal objects for testing anesthetics actions in the future.

FOOD ENGINEER DUYGU YILMAZ HAD RESEARCHED OLIVE SEED FOR 2 YEARS, AND AS A RESULT SHE PRODUCED BIOPLASTIC FROM OLIVE SEEDS.

BIOPLASTIC IS PRODUCED FROM OLIVE SEED

Biolive Company's Founder & CEO Duygu Yılmaz, chosen as Future Promising Woman Entrepreneur in 2017 by Garanti Bank, KAGİDER and Ekonomist Magazine. Different products can be produced from the antibacterial bioplastic packaging to extend the shelf life of the products.

Biolive also received R&D investment from Vestel Venture. Now bioplastic experiments are being carried out for Vestel refrigerators.Daughter of a family of 2 children, Duygu Yılmaz's researcher spirit appeared in the secondary school. She was 12 years old when she was making a washing machine for her doll's clothes from the fan motor. Her police father, who was a veteran at the age of 30, always said if she want to graduate she must be successful in her education because of financial problems.

She inspired by her father who swallows olive seeds every morning because he claims the olive seeds are good for his stomach then she started a research about olive seeds. But before that she stopped her father to swallowing olive seeds, if he want to swallow the seed it had to be in powder form.In that time she was working in a honey company. After she began to experiment with olive seeds in her laboratory, which she built at home out of her shift. She quitted the job and took her 2 friends with her and founded Biolive Company.

But she had no fund and no one believed that a 26 year old woman can be successful and can produce products, but she worked 16 hours a day and she didn't give up. Sometimes she worked at the laboratory in her house and later she continued her researches in R&D center, which she and her friends established.

SHE RESEARCHED OLIVE SEEDS FOR 2 YEARS

She confirmed that substance in olive seeds can be taken in extract form while she was working on this matter she produced plastic from it. The prototype of the product is finished about 2 years. Thousands of trials had been made over the past 2 years but team worked day and night to constantly find the formula.
"We didn't lose our hopes we have always worked with determination," said Duygu Yılmaz. First they made bioplastic films from olive seeds then those films turned into granules that could be used in every area of plastic and sectoral works started.

The increasing effect of biofilms on antimicrobial and food shelf life has attracted interest from manufacturers of refrigerators.

When an American company offered to buy her inventions, Vestel Ventures has decided to support Biolive for R&D work. Currently, Duygu Yılmaz is working on Vestel's bioplastic production which can be used in refrigerator production in Manisa facilities.

MY DREAM IS TO DO WORKS THAT TOUCHES PEOPLE'S LIVES

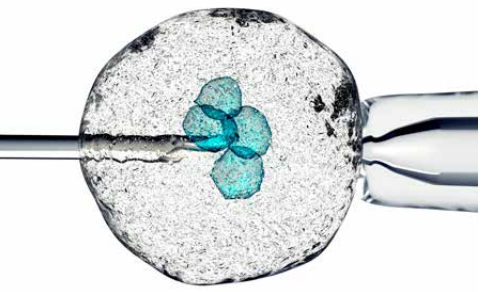
"Apart from bioplastic refrigerator technology, we work on granules that can be used in many fields such as food container, food packaging, textiles, hygiene materials, organic toys and baby pacifier," said Duygu Yılmaz, also they are producing olive seed extract creams and tonics.

Duygu Yilmaz thinks that antimicrobial bioplastics disappearing in a very short time in nature will transform the world.

"Since my childhood I have never dreamed a normal working life. I believe that people take on different roles in coming to the world, my role is to do things that will touch the lives of people and nature. My biggest dream is to be a pioneer in the bioplastics industry in Turkey."

MEET “THE SNOWBABY” EMMA

“ SHE WAS FROZEN AS AN EMBRYO FOR 24 YEARS



In November 2017, a baby was successfully born from an embryo frozen for 24 years, the longest period a viable embryo has ever been stored. Baby Emma is just one example of the amazing fertility solutions science has developed in just a few short years. A “snowbaby” is a term used to describe an embryo that is frozen in storage and preserved for potential future birth. In November 2017, the longest frozen embryo ever held in storage was successfully born in Tennessee. The embryo, created from anonymous donors, was frozen on October 14, 1992, just one year after mother Tina Gibson’s own birth.

The 24-year-old frozen embryo was initially a bit of a surprise, even to parents Tina and Benjamin Gibson. Tina first remarked: “Do you realize I’m only 25? This embryo and I could have been best friends.” But, now 26, Tina told CNN, “I just wanted a baby. I don’t care if it’s a world record or not.” She got her wish: Emma Wren Gibson was born on November 25, 2017
Before the birth of baby Emma, the longest-known successful snowbaby birth was from a 20-year-old frozen embryo. While the Gibsons are mostly excited about parenthood, from a medical and scientific perspective, this is a remarkable success. This shows that embryos, like the one that became Emma, can safely be donated and left frozen in storage for potential parents struggling with fertility, like Benjamin Gibson, who has cystic fibrosis. It could also mean that those with cancer who anticipate losing fertility after chemotherapy treatments could store a healthy embryo until they are ready to be a parent.

FUTURE OF FERTILITY

As shown in the case of the Gibsons, fertility and birth look a lot different now than they did even a few years ago. An embryo created 24 years before the baby is born is only the tip of the futuristic fertility iceberg.
This past year, premature lambs were developed inside of artificial wombs. Just 105 days into development, lambs were placed into the uterus-like, fluid-filled “biobag” to continue growing. While at that stage in development, equivalent to 22 weeks in humans, neither human nor lamb is able to survive alone outside of the womb. But after four weeks in the biobags, the lambs developed lungs and hair and, most importantly, were able to survive on their own in the outside world. This technique could one day save the lives of human children born dangerously premature, and prevent the long-lasting medical problems that can come from premature birth.
Also this year, a woman in the U.S successfully gave birth after receiving a uterus transplant. This promising development shows that women with severe medical complications, who are born without a uterus, or who are transgender could still potentially give birth.
In another fertility marvel, a woman successfully gave birth thanks to an ovary that was removed pre-puberty. There is even the promise of 3D-printed ovaries, which successfully allowed infertile mice to give birth.

While these developments might just seem like futuristic medical advances, they are irreplaceable opportunities for many who have dreamed of starting families. Not every woman is born with a uterus, and a remarkably large percentage of people struggle with fertility, sometimes for many years. These advances in the journey from conception to birth are building the foundations of a future in which starting a family is something that everyone can choose, giving a new option to people who never before had it.

MAY BE THE EARTH'S OLDEST FOSSILS ARE 3.5 BILLION YEARS OLD

"

THE CONCLUSION, MADE BY RESEARCHERS AT THE UNIVERSITY OF WISCONSIN-MADISON AND UCLA, SUGGESTS THAT EXTRATERRESTRIAL LIFE MIGHT DEVELOP MORE EASILY THAN THOUGHT.

How common is life in the universe? This is a hard question for scientists to answer definitively, since we only have one data point: Earth.

But a new study published in the Proceedings of the National Academy of Sciences on some of Earth's oldest fossils has shown that a diverse group of organisms had already evolved on our planet nearly 3.5 billion years ago, much earlier in Earth's history than thought.

The researchers say the new findings mean it might be easy for life to develop and evolve, which would increase the likelihood that life is widespread throughout the universe.

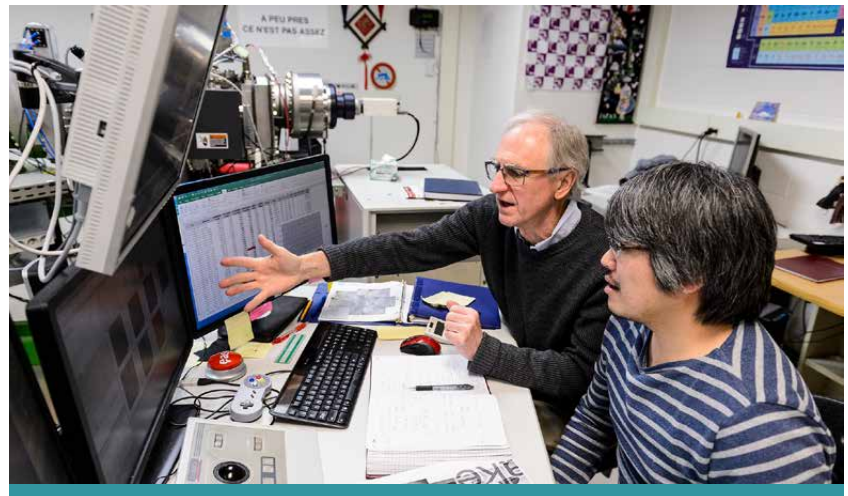
"By 3.465 billion years ago, life was already diverse on Earth; that's clear," J. William Schopf from UCLA, lead author of the new study, said in a statement.

"This tells us life had to have begun substantially earlier and it confirms that it was not difficult for primitive life to form and to evolve into more advanced microorganisms."

Schopf added that the research shows, if the conditions are right, "It looks like life in the universe should be widespread."
The new study looked at fossilized microorganisms that were found in Western Australia in 1992. Schopf has been studying these fossils since their discovery and has published several papers about them, determining their age at 3.465 billion years.

In previous research, Schopf and his colleagues established that the origin of the fossils was biological, which was somewhat controversial. Some critics argued that the oddly shaped cylindrical fossils were just odd minerals that only look like biological specimens.
However, subsequent research in 2002 confirmed the fossils' biological nature. Research published in the journal Nature found that the remains of iron-eating bacteria dated back to between 3.8 billion and 4.3 billion years ago.

Schopf teamed up with John Valley, a geoscience professor from the University of Wisconsin-Madison who has been working for 10 years to refine a technique called secondary ion mass spectroscopy, or SIMS. This device shoots an ion beam on a surface and, in a vacuum, collects and analyzes ejected secondary ions, searching for specific types of isotopes.



Geoscience professor John Valley, left, and research scientist Kouki Kitajima collaborate in the Wisconsin Secondary Ion Mass Spectrometer Lab in Weeks Hall

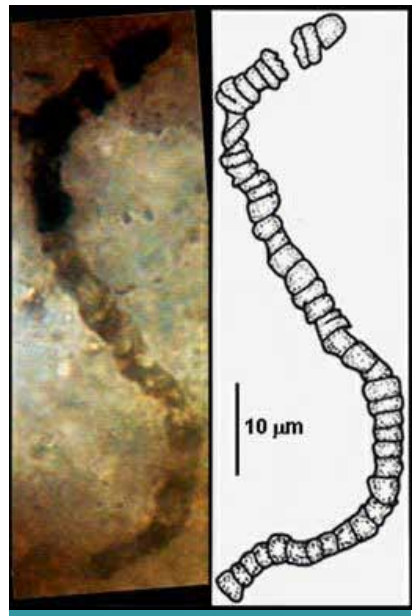
The work was painstaking, as the fossils are each only about 10 micrometers wide, meaning eight of them could fit along the width of a human hair.
The team analyzed eleven microfossils and were able to separate the carbon from each fossil into its constituent isotopes and measure their ratios.

The results indicated they were "characteristic of biology and metabolic function," Valley said in a statement. They found several different types of organisms, a primitive but diverse group," Schopf said. Two of the species appeared to have performed a simple form of photosynthesis, another apparently produced methane gas, and two others appear to have consumed methane and used it to build their cell walls.
In short, these fossils represent a "community" that lived together and "were a significant component of Earth's early biosphere," the team wrote, and were comprised of primitive photosynthesizers, methane producers, and methane users.

Because several different types of microbes were shown to be already present by 3.5 billion years ago, this means life started much earlier than that. Earlier studies by Valley have shown that liquid water oceans existed on Earth as early as 4.3 billion years ago, more than 800 million years before the Western Australian fossils studied in this research would have been alive, and just 250 million years after Earth formed.
The team said this new study strengthens the case for life existing elsewhere in the universe because it would be extremely unlikely that it arose quickly on Earth but did not develop anywhere else.

"This is something we all would like to find out," Valley said.

An epoxy mount containing a sliver of a nearly 3.5 billion-year-old rock from the Apex chert deposit in Western Australia is pictured at the Wisconsin Secondary Ion Mass Spectrometer Lab in Weeks Hall. Jeff Miller



An example of one of the microfossils discovered in a sample of rock recovered from the Apex Chert. A new study used sophisticated chemical analysis to confirm the microscopic structures found in the rock are biological. J. William Schopf

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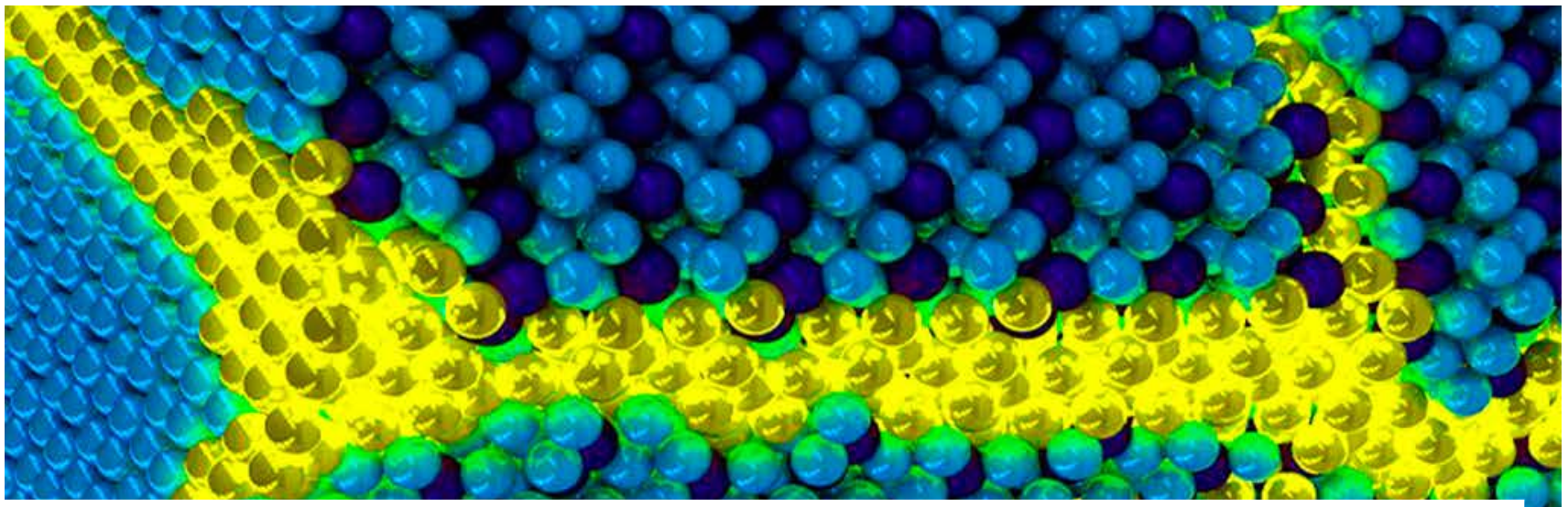

AFTER 50 YEARS EXCITONIUM'S PRESENCE PROVED

"MANY DECADES AGO, SCIENTISTS THEORIZED THE POSSIBILITY OF STRANGE MATERIAL THEY CALLED "EXCITONIUM." NOW, RESEARCHERS HAVE PROVEN ITS EXISTENCE.

Researchers at the University of Illinois have announced an exciting finding the discovery of a new form of matter: excitonium. This material is made up of a kind of boson, a composite particle that could allow the matter to act as a superfluid, superconductor, or even as an insulating electronic crystal.

Physics professor Peter Abbamonte and his team worked together with colleagues at Illinois, University of California, Berkeley, and University of Amsterdam to prove once-and-for-all the existence of this strange and mysterious type of matter that was theorized more than 50 years ago. They described how they detected excitonium in the journal Science.

Excitonium is a condensate made up of excitons, which are what you get when you combine escaped electrons and the "holes" they left. This quirky quantum mechanical pairing is possible because, in semiconductors, electrons on the edge of one energy level in an atom are able, when excited, to jump into the next energy level, leaving behind a "hole" in the previous level. This hole acts like a positively charged particle, attracting the negatively charged electron that escaped.

To prove the existence of excitons, this team studied crystals doped with dichalcogenide titanium diselenide (1T-TiSe2), a transition metal. They were even able to reproduce their results five separate times.

QUANTUM MYSTERIES

Until now, scientists had not had the experimental tools needed to distinguish with certainty whether they were detecting excitonium or another similar phase of matter. Using a novel technique, however, this research team was able to definitively measure, for the first time, the collective excitations of the low-energy bosonic particles, the paired electrons, and the holes, no matter what their momentum might be. In other words, this was the first-ever observation of a soft plasmon phase that is the precursor to the exciton condensation.

"This result is of cosmic significance," Abbamonte stated in a press release. "Ever since the term 'excitonium' was coined in the 1960s by Harvard theoretical physicist Bert Halperin, physicists have sought to demonstrate its existence. Theorists have debated whether it would be an insulator, a perfect conductor, or a superfluid with some convincing arguments on all sides. Since the 1970s, many experimentalists have published evidence of the existence of excitonium, but their findings weren't definitive proof and could equally have been explained by a conventional structural phase transition."

Now that excitonium has been proven to exist and has been concretely observed in experimentation, its properties can be further explored and applied. Most obviously, as a superconductor and superfluid, this material could be used to further existing technologies.

Additionally, since analyzing quantum phenomena is what guides and shapes our understanding of quantum mechanics, this research could help to further demystify current quantum puzzles. These applications, especially those in practical technologies, are purely speculative at this point, however. It is impossible to exactly predict what the future might hold for excitonium, but we do know for certain that it has more potential now than it ever has before.

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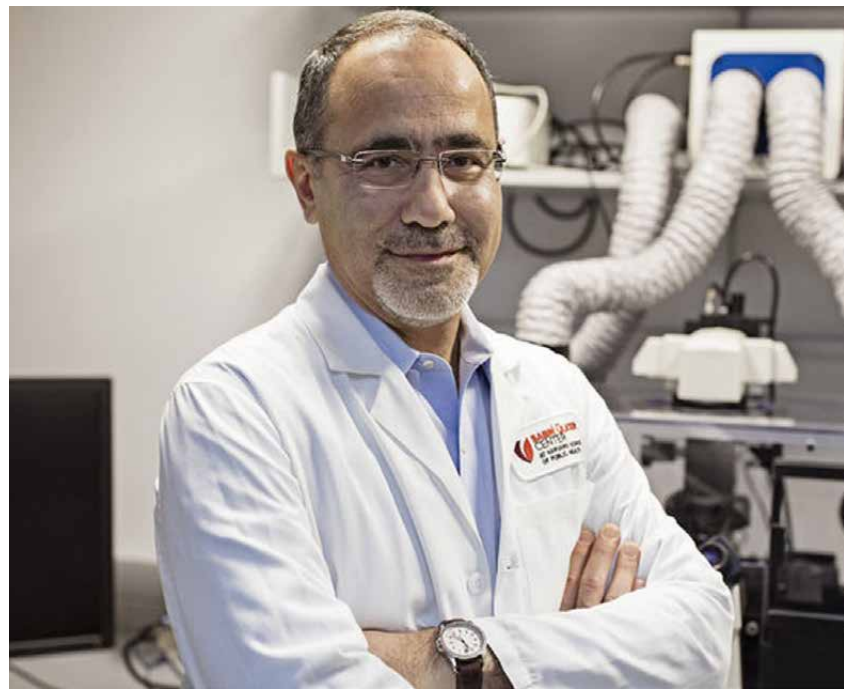
TURKISH PROFESSOR EXCITES THE WORLD WITH THE CHOLESTEROL DISCOVERY



The Sabri Ulker Center resarch team led by Professor Gökhan Hotamışlıgil at Harvard University, has developed a mechanism to protect cells from harmful effects of cholesterol.

The Sabri Ulker Center resarch team led by Professor Hotamışlıgil - working at Harvard University on genetic and chronic metabolic diseases - has developed a mechanism that warns when cholesterol levels rise in the cell and protects cells against harmful effects of cholesterol.
Hotamışlıgil told that they are working on chronic metabolic diseases that come with age such as diabetes, heart disease, obesity and degenerative disease. He also said that they are trying to understand one of the most basic mechanisms: How metabolism works and how it is impaires.
"It will be an important weapon for us to fight against these diseases. The frightening side of cholesterol among the public that it is rising in blood and this rising is also a major risk factor for heart and vascular, brain and metabolic diseases. However, this process is much longer the main damage starts with the rise of cholesterol inside the cell. This causes the system to slowly gnaw and create problems at organ level, then circulatory level and remote organ level."
"What excites us the most is not just a discovery for a disease but a mechanism that can make it possible to change all the cells and all the functions that those cells work.Let's think it's a switch, there is a detector that detects cholesterol how much and where it is and when it is high enough it closes then opens. We are going out on a path to improve this system in every tissue and every disease condition and if we can achieve it, it would be an important weapon to combat all these diseases. This is what we foresee and our dream," said Hotamışlıgil.

Hotamışlıgil said that their first field of application will be liver fattening and related disorders and then they will test them on pancreas diseases related to the diabetes and digestive system.

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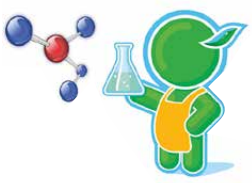

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CHINA'S **"SOCIAL CREDIT SYSTEM"** WILL RATE HOW VALUABLE YOU ARE AS A HUMAN

IN A CONTENTIOUS WORLD FIRST, CHINA PLANS TO IMPLEMENT A SOCIAL CREDIT SYSTEM (OFFICIALLY REFERRED TO AS A SOCIAL CREDIT SCORE OR SCS) BY 2020.

The idea first appeared in a document from the State Council of China published in June 2014. It is a technological advancement so shocking to modern-minded paradigms that many can do little but sit back in defeatist chagrin as science fiction shows us its darker side.

The SCS seems relatively simple. Every citizen in China, which now has numbers swelling to well over 1.3 billion, would be given a score that, as a matter of public record, is available for all to see. This citizen score comes from monitoring an individual's social behavior from their spending habits and how regularly they pay bills, to their social interactions and it'll become the basis of that person's trustworthiness, which would also be publicly ranked.

This actually sounds worse than an Orwellian nightmare.
A citizen's score affects their eligibility for a number of services, including the kinds of jobs or mortgages they can get, and it also impacts what schools their children qualify for. In this respect, the SCS resembles one of the most chilling episodes from Black Mirror's third season. Incidentally, the show isn't really known as a "feel-good" flick. It presents various dystopian views of society, but China's SCS proves reality is darker than fiction.

This "service" isn't slated to go full-swing until 2020, but China has already started a voluntary implementation of the SCS by partnering with a number of private companies in order to iron out the algorithmic details needed for such a large-scale, data-driven system.
The companies that are implementing SCS include China Rapid Finance, which is a partner of social network giant Tencent, and Sesame Credit, a subsidiary of Alibaba affiliate company Ant Financial Services Group (AFSG).

Both Rapid Finance and Sesame Credit have access to intimidating quantities of data, the former through its WeChat messaging app (at present with 850 million active users) and the latter through its AliPay payment service. According to local media, Tencent's SCS comes with its QQ chat app, where an individual's score comes in a range between 300 and 850 and is broken down into five sub-categories: social connections, consumption behavior, security, wealth, and compliance.

POSITIVE (AND NEGATIVE) REINFORCEMENT

Proponents of the SCS see this as an opportunity to improve on some of the state's services. Some argue that this would give Chinese citizens much-needed access to financial services. The government also says that this will "allow the trustworthy to roam everywhere under heaven while making

it hard for the discredited to take a single step," according to The Wall Street Journal. In some situations, this could prove workable. After all, finance and loan organizations already detail debtors' credit eligibility if they happen to be in default, preventing them from taking on more debt that they may be unable to pay back.

The utopic goal of managing citizen finances via structural checks and balances feels like an elegant solution to assuage public debt, and will certainly encourage all involved to improve their debt activity. But structural management of personal finances on this all-pervasive level crosses several boundaries.

The major issue is this: the SCS goes well beyond just rating ones ability to manage debt; in essence, it puts a number on a citizen rating their worth as a human being and it forces others to respect that rating.

"China's proposed social score is an absolute reaffirmation of China continuing to push forward to be a complete police state," said Anurag Lal, former Director of the U.S. National Broadband Task Force for the FCC under the Obama administration and president and CEO of mobility solutions firm Infinite Convergence, in an email to Futurism. "They take it a step further by becoming not only an establishment of a totalitarian police state that monitors its people but one that completely evades users' privacy. All forms of activity and interactions, online or otherwise, will be rated, available to view and stored as data."

It seems that the infamous Great Firewall is only the most well-known feature of China's worsening socio-political plight.

BIG DATA FOR GOOD BEHAVIOR

More than working as a social enabler, such a system could end up becoming highly restrictive. Speaking to WIRED, Sesame Credit's Technology Director, Li Yingyun, admitted as much, saying that under an SCS system, a person could be judged by his purchases. "Someone who plays video games for ten hours a day, for example, would be considered an idle person," Li said. "Someone who frequently buys diapers would be considered as probably a parent, who on balance is more likely to have a sense of responsibility."

Li sees these as positive developments, by virtue of which a person is encouraged to take greater responsibility for their living and spending habits in order to earn a positive citizen score i.e. become "trustworthy." Chinese blogger Rasul Majid told WIRED that he actually thinks it's a better way of keeping tabs on how the government monitors his data. If one knows how one is surveilled, one knows when and where to clean up one's act. Lal, however, disagrees: "How do you define people's behaviors on a day-to-day basis? People do so many different things for so many different reasons, and if the context is not appreciated it can be misconstrued," he said. The words ring true. One does not need to think hard to uncover why it may be problematic to say that people who have children are, in essence, people you should trust. What does this mean for the infertile? What does it mean for same-sex couples? What does it mean for people who simply do not wish to have children? Probably nothing good.

In the end, even a basic SCS system that only rates a few data points could paint a very inaccurate and incomplete picture of a person. "You may be playing games for 10 hours and if the algorithm says you're idle, it might miss the reason you're playing these games. Maybe you're an engineer and you're beta testing them. But now you're automatically designated as an idle person," Lal added. "When in reality, maybe you were just doing your job." Ultimately, the problem is that "socially acceptable behavior" will be defined by the Chinese government, not a democratic process or an objective panel. And punitive measures will certainly be taken when a person breaks this trust.

With the SCS, the Chinese government will actually hit two birds with one stone: They will have a way of promoting and enforcing what they consider to be "socially acceptable behavior," and they will have a way of monitoring virtually all aspects of citizens' lives.
Lal doesn't believe this setup could fly long term, though. "In the free world, this will never catch on. If they're naive enough to roll it out, it will harm China's credibility on a regional and global scale. Tech companies working in China are already frustrated due to the intense restrictions when it comes to tech policies and encryption this will only add to their frustration."

This system represents something more insidious than the panopticon that renowned social theorist Michel Foucault warned us about. So let's hope that Lal is correct.
Editor's Note: This article has been updated to make it clear that Lal is the "former" director under the Obama administration.

Source: Futurism

ANESTHETICS HAVE SAME **EFFECTS ON PLANTS AS ANIMALS & HUMANS**

A new study published in Annals of Botany shows that plants react to anesthetics similarly to the way animals and humans do, suggesting plants are ideal objects for testing anesthetics actions in the future.

Anesthetics were first used in the 19th century when it was discovered that inhaling ether gas stopped patients from feeling pain during surgery. Since then, many different chemicals have been found to induce anesthesia. However, despite the fact that many anesthetics have been used over a 150-year period, little is known about how these different compounds with no structural similarities behave as anesthetic agents inducing loss of consciousness.

Remarkably, as found in the new study, anesthetics also work on plants. Researchers found that, when exposed to anesthetics, a number of plants lost both their autonomous and touch-induced movements. Venus flytraps no longer generate electrical signals and their traps remain open when trigger hairs were touched, and growing pea tendrils stopped their autonomous movements and were immobilized in a curled shape.

The results of this study suggest that the action of anesthetic at cellular and organ levels are similar in plants and animals. This study suggests that plants are emerging as model objects to study general questions related to anesthetics, as well as to serve as a suitable alternative test system for human anesthesia.

> AN EXPERIMENTAL CONSERVATION PROJECT THAT WAS ABANDONED AND ALMOST FORGOTTEN ABOUT, HAS ENDED UP PRODUCING AN AMAZING ECOLOGICAL WIN NEARLY TWO DECADES AFTER IT WAS DREAMT UP.

HOW 12,000 TONNES OF DUMPED ORANGE PEEL GREW INTO A LANDSCAPE NOBODY EXPECTED TO FIND

The plan, which saw a juice company dump 1,000 truckloads of waste orange peel in a barren pasture in Costa Rica back in the mid 1990s, has eventually revitalised the desolate site into a thriving, lush forest.

That's one heck of a turnaround, especially since the project was forced to close in only its second year but despite the early cancellation, the peel already deposited on the 3-hectare (7-acre) site led to a 176 percent increase in above-ground biomass.
"This is one of the only instances I've ever heard of where you can have cost negative carbon sequestration," says ecologist Timothy Treuer from Princeton University.

"It's not just a win-win between the company and the local park it's a win for everyone."
The plan was born in 1997 when Princeton researchers Daniel Janzen and Winnie Hallwachs approached Costa Rican orange juice manufacturer Del Oro with a unique opportunity.

If Del Oro agreed to donate part of its land bordering the Guanacaste Conservation Area to the national park, the company would be allowed to dump its discarded orange peel at no cost on degraded land in the park.

The juice company agreed to the deal, and some 12,000 tonnes of waste orange peel carried by a convoy of 1,000 truckloads was unceremoniously dumped on virtually lifeless soils at the site.

The deluge of nutrient-rich organic waste had an almost instantaneous effect on the fertility of the land.
"Within about six months the orange peels had been converted from orange peels into this thick black loamy soil," Treuer told Scientific American.
"Kind of passing through this gross stage in between of kind of sludgy stuff filled with fly larvae."

Despite this promising start, the conservation experiment wasn't to last, after a rival juice manufacturer called TicoFruit sued Del Oro, alleging that its competitor had "defiled a national park". Costa Rica's Supreme Court sided with TicoFruit, and the ambitious experiment was forced to end, which saw the site largely forgotten about for the next 15 years.

Then, in 2013, Treuer decided to evaluate the site while visiting Costa Rica for other research.

It turns out, the only problem was actually finding the former wasteland a challenge that necessitated two trips to the site, given the arid landscape had been unrecognisably transformed into a dense, vine-filled jungle.

"It didn't help that the six-foot-long sign with bright yellow lettering marking the site was so overgrown with vines that we literally didn't find it until years later," Treuer told Marlene Cimons at Popular Science, "after dozens and dozens of site visits."

When comparing the site to a nearby control area that hadn't been treated with orange peels, Treuer's team found their experimental compost heap yielded richer soil, more tree biomass, and a broader diversity of tree species including a fig tree so huge it would take three people wrapping their arms around the trunk to cover the circumference.

As for how the orange peels were able to regenerate the site so effectively in just 16 years of isolation, nobody's entirely sure.

"That's the million dollar question that we don't yet have the answer to," Treuer told Popular Science.

"I strongly suspect that it was some synergy between suppression of the invasive grass and rejuvenation of heavily degraded soils."

While the exact mechanisms remain something of a mystery for now, the researchers hope that the remarkable success of this abandoned, 16-year-old orange peel dump will inspire other similar conservation projects.

Especially since, in addition to the double-win of dealing with waste and revitalising barren landscapes, richer woodlands also sequester greater amounts of carbon from the atmosphere meaning little plots of regenerated land like this could ultimately help save the planet.

"It's a shame where we live in a world with nutrient-limited degraded ecosystems and also nutrient-rich waste streams. We'd like to see those things come together a little bit," Treuer told Scientific American.

"That's not licence for any agricultural company to just start dumping their waste products on protected areas, but it does mean that we should start thinking about ways to do thoughtful experimentation to see if in their particular system they can have similar win-win-win results."
The findings are reported in Restoration Ecology.

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> THE SUPERMASSIVE BLACK HOLE FORMED DURING THE EARLIEST MOMENTS OF THE UNIVERSE, WHICH HAS RESEARCHERS PUZZLED OVER HOW IT GOT TO BE SO BIG.

THE OLDEST BLACK HOLE EVER FOUND

A huge black hole has just been discovered that is about 13 billion light-years old almost as old as the universe itself. The find of this supermassive black hole is puzzling astronomers because they can't figure out how this black hole was formed so early in the universe's history.

The black hole, which is in the center of the quasar ULAS J1342+0928, is about 800 million times more massive than our sun. Scientists previously thought that black holes grow by picking up mass from the environment around them. But this black hole arose in a universe that was only 690 million years old not nearly enough time to accumulate the mass needed to grow so big.

"It has an extremely high mass, and yet the universe is so young that this thing shouldn't exist," Robert Simcoe, an astrophysicist at the Massachusetts Institute of Technology, said in a statement. "So there must be another way that it formed," he added. "And how exactly that happens, nobody knows."

Besides revealing a mystery about black hole formation, the new discovery sheds more light on when the first stars formed in the universe. Before first starlight, the universe was dominated by neutral hydrogen atoms.

As more stars and galaxies filled the void, their radiation began to energize the hydrogen, allowing the electrons bound to the nucleus to recombine and generate other chemical reactions. But when the black hole was formed, the universe was comprised of about 50 percent ionized (or energized) hydrogen and 50 percent neutral hydrogen.

"It's a moment when the first galaxies emerged from their cocoons of neutral gas and started to shine their way out," Simcoe said. "This is the most accurate measurement of that time and a real indication of when the first stars turned on."

The black hole was found using an instrument called the Folded-port InfraRed Echellette (FIRE) that is installed on the 6.5 meter Magellan telescopes at Las Campanas Observatory in Chile. The discovery was made by Eduardo Bañados, an astrophysicist at the Carnegie Institution for Science and Princeton University.

Bañados was on a search for quasars, which are extremely bright objects that have a supermassive black hole embedded in them. What made this black hole stand out was its extremely high redshift, which refers to how the light from cosmic objects shifts to the redder end of the spectrum as the universe expands. The more distant the object, the more extreme the redshift. Also of interest was how fast gas moved inside of the quasar.

"Something is causing gas within the quasar to move around at very high speed, and the only phenomenon we know that achieves such speeds is orbit around a supermassive black hole," Simcoe said.

Observations from FIRE showed that much of the hydrogen around the quasar was neutral not ionized. Extrapolating from FIRE's observations, the researchers determined the universe itself was about half neutral, half ionized when the quasar was formed. And that means that stars must have turned on at about the same time just 690 million years after the Big Bang.

The research was supported by the National Science Foundation and published in the journal Nature.

"This adds to our understanding of our universe at large, because we've identified that moment of time when the universe is in the middle of this very rapid transition from neutral to ionized," Simcoe said. "We now have the most accurate measurements to date of when the first stars were turning on."

LC-MS/MS Analysis of Steroid Hormones in Serum

Steroid hormones are characterized as effective biological messengers which take part in body regulation processes such as development, reproduction, stress, and growth even at low concentrations. Thus, reliable and simultaneous analysis of a broad panel of steroid hormones plays vital role for the investigation of the hormone profile, which could be useful in detection endocrine disorders resulting from defects in steroid biosynthesis such as congenital adrenal hyperplasia (CAH). Due to the restrictions and shortcomings of immunoassay techniques for measurement of steroid hormones in body fluids, liquid chromatography tandem mass spectrometry (LC-MS/MS) is increasingly becoming the method for multi-class steroid hormone detection and quantification.

Jasem's approach is offering simultaneously quantification of clinically foremost 16 steroid hormones by LC-MS/MS in 16 minutes.

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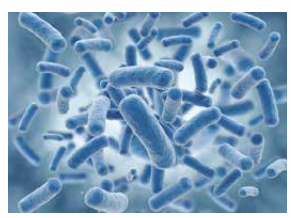
- Ensure accurate quantitation, high sensitivity and selectivity comparing to immunoassays



Parameters

- 17-α-Hydroxyprogesterone
- Aldosterone
- Testosterone
- Estradiol
- Progesterone
- Cortisol
- Dihydrotestosterone
- Androstene-3,17-dione
- Corticosterone
- 11-Deoxycortisol
- Pregnenolone
- 11-Deoxycorticosterone
- DHEA
- DHEAS
- 17-α-Hydroxypregnenolone
- Androsterone

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THE RISE OF SMART MACHINES PUTS SPOTLIGHT ON ‘ROBOT RIGHTS’

> YOU PROBABLY WOULDN’T HAVE ANY QUALMS ABOUT SWITCHING OFF APPLE’S VIRTUAL ASSISTANT, SIRI OR AMAZON’S ALEXA OR MICROSOFT’S CORTANA. SUCH ENTITIES EMULATE A HUMAN ASSISTANT BUT PLAINLY AREN’T HUMAN. WE SENSE THAT BENEATH THE SOPHISTICATED SOFTWARE, THERE’S “NOBODY HOME.”

But artificial intelligence is progressing swiftly. In the not-too-distant future we may begin to feel that our machines have something akin to thoughts and feelings, even though they’re made of metal and plastic rather than flesh and blood. When that happens, how we treat our machines will matter; philosophers and scholars are already imagining a time when robots and intelligent machines may deserve and be accorded some sort of rights.

These wouldn’t necessarily be human rights. But “if you’ve got a computer or a robot that’s autonomous and self-aware, I think it would be very hard to say it’s not a person,” says Kristin Andrews, a philosopher at York University in Toronto, Canada. Which raises a host of difficult questions. How should we treat a robot that has some degree of consciousness? What if we’re convinced that an AI program has the capacity to suffer emotionally, or to feel pain? Would shutting it off be tantamount to murder?

ROBOTS VS. APES

An obvious comparison is to the animal rights movement. Animal rights advocates have been pushing for a reassessment of the legal status of certain animals, especially the great apes. Organizations like the Coral Springs, Florida-based Nonhuman Rights Project believe that chimpanzees, gorillas, and orangutans deserve to be treated as autonomous persons, rather than mere property.

Steven Wise, who leads the organization’s legal team, says that the same logic applies to any autonomous entity, living or not. If one day we have sentient robots, he says, “we should have the same sort of moral and legal responsibilities toward them that we’re in the process of developing with respect to nonhuman animals.” Of course, deciding which machines deserve moral consideration will be tricky, because we often project human thoughts and feelings onto inanimate entities and so end up sympathizing with entities that have no thoughts or feelings at all.

Consider Spot, a doglike robot developed by Boston Dynamics. Earlier this year, the Waltham, Massachusetts-based company released a video showing employees kicking the four-legged machine. The idea was to show off Spot’s remarkable balance. But some people saw it as akin to animal cruelty. People for the Ethical Treatment of Animals (PETA), for example, issued a statement describing Spot’s treatment as “inappropriate.”

Kate Darling, a researcher at the MIT Media Lab in Cambridge,

Massachusetts, observed something similar when she studied how people interact with Pleo, a toy dinosaur robot. Pleo doesn't look lifelike it's obviously a toy. But it's programmed to act and speak in ways that suggest not only a form of intelligence but also the ability to experience suffering. If you hold Pleo upside-down, it will whimper and tell you to stop.

In an effort to see just how far we might go in extending compassion to simple robots, Darling encouraged participants at a recent workshop to play with Pleo and then asked them to destroy it. Almost all refused. "People are primed, subconsciously, to treat robots like living things, even though on a conscious level, on a rational level, we totally understand that they're not real," Darling says.While neither Pleo nor Spot can feel pain, Darling believes it's worth paying attention to how we treat these entities. "If it is disturbing to us to behave violently towards them if there's something that feels wrong about it maybe that's a piece of our empathy that we don't want to turn off, because it could influence how we treat other living things," she says. (This is a key question raised by the TV series Westworld, in which guests at a theme park are encouraged to treat ultra-lifelike humanoid robots however they please.)

CONVERSING WITH ROBOTS

For now, mistreating Pleo or any other existing robot is no crime as long as you're the owner. But what about mistreating a bot that we believed really had some form of consciousness? And how would we be able to tell if a machine has a mind in the first place? Computer science pioneer Alan Turing pondered this question half a century ago. The way Turing saw it, we can never know for sure what a machine is feeling or experiencing so our best bet is simply to see if we can carry on a conversation with it just as if it were human (what we now call the Turing test).

Given the complexity of human conversation, building a machine capable of engaging in lengthy verbal exchanges is a daunting task. But if we could build such a machine, Turing argued, we ought to treat it as though it's a thinking, feeling being.
Mark Goldfeder, an Atlanta-based rabbi and law professor, has reached a similar conclusion: If an entity acts human, he wrote recently, "I can not start poking it to see if it bleeds. I have a responsibility to treat all that seem human as humans, and it is better to err on the side of caution from an ethical perspective."

The obvious conclusion is that rights ought to be accorded not on the basis of biology but on something even more fundamental: personhood.

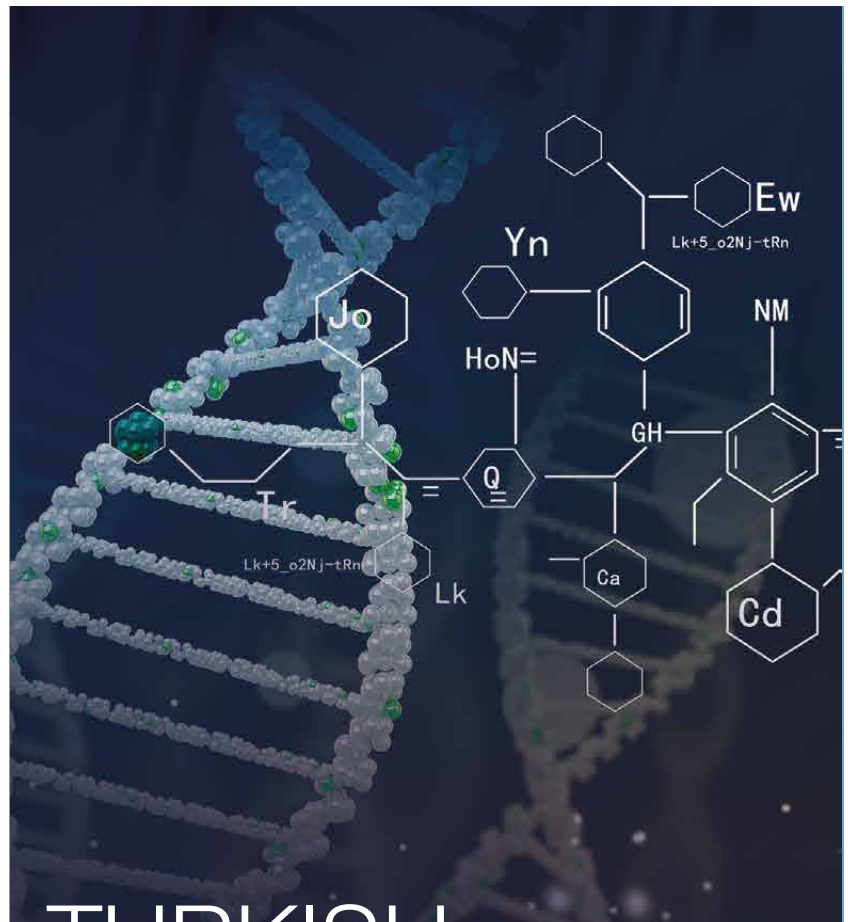
WHAT RIGHTS?

If we wind up recognizing some intelligent machine as a person, which legal rights would we be obliged to bestow on it? If it could pass the Turing test, we might feel it would deserve at least the right to continued existence. But Robert Sparrow, a philosopher at Monash University in Melbourne, Australia, thinks that's just the beginning. What happens, he wonders, if a machine's "mind" is even greater than a human's? In a piece that appeared recently on TheCritique.com, he writes: "Indeed, not only would it be just as wrong to kill a machine that could pass the Turing test as to kill an adult human being, but, depending on the capacities of the machine, it might even be more wrong."

Maybe that makes sense from the perspective of pure logic. But Ryan Calo, an expert in robotics and cyber law at the University of Washington in Seattle, says our laws are unlikely to bend that far. "Our legal system reflects our basic biology," he says. If we one day invent some sort of artificial person, "it would break everything about the law, as we understand it today."

For Andrews, the key issue is the entity's right to have its own interests recognized. Of course, it may be tricky determining what those interests are just as it can be hard for people from one culture to understand the desires of people from another. But when we recognize something as a person, we're obligated to at least try to do the right thing, she says. "If we realize that something is actually a 'someone,' then we have to take their interests into account."

And perhaps it's not so far-fetched to imagine that those interests might include continued existence in which case we might want to think twice before reaching for the off button.



TURKISH SIGNATURE FOR GENETIC DIAGNOSIS OF HEMOPHILIA

Hemophilia genetic test kit is the first time in the world was produced at the Faculty of Medicine of Ege University by Associate Professor Hüseyin Onay.

Ege University (EÜ) Medical Faculty Hospital Department of Medical Genetics Associate Professor Hüseyin Onay developed the "first" test kit for the detection of hemophilia, which is difficult to diagnose genetically. Onay said in a statement he did nearly 100.000 tests in his college for 15 years.

Onay reported that hemorrhagic disorder was directed towards the hemophilia disorder, "Until now, no standard method has been found to be used in the genetic diagnosis of this condition, which can cause deaths. From here I have completed the study I started on the kit, which will provide the genetic diagnosis of hemophilia. My previous experience was an important factor in the success of my work."
Onay points out that there are treatments of this disease, "For this reason, genetic diagnosis is very important. There are a few advantages to this recognition. It determines the severity of the disease. We can prevent the next generation or a sick individual from having a sick sibling. At the same time, genetic diagnosis is very important in determining the patient, who is resistant to treatment."
Onay reported that a kit for the genetic diagnosis of hemophilia has not been produced so far in the world and he expressed the pride of accomplishing this.

Onay emphasizes the use of the kit they produce, "In this way we have produced an approved hemophilia genetic diagnostic kit in the world. We are planning to introduce and market this product in foreign trade fairs and scientific congresses."

FOREIGN TOURIST ARRIVALS IN TURKEY ROSE NEARLY 30 PCT IN 2017

The number of foreign tourists visiting Turkey rose 28 percent in the first 10 months of the year, hitting 29 million, mainly due to an ongoing rebound in the Russian market, data from Turkey's Tourism Ministry showed on Nov. 29.

The number of foreign visitors arriving in Turkey surged 22.2 percent in October to 2.99 million, the data also showed.
More than 4.5 million Russians visited Turkey in the first 10 months of the year with a 496 percent year-on-year increase, as the bilateral ties between the two countries have normalized after a jet crisis.
The number of Russian tourists who visited Turkey was 767,000 in the January - October period of 2016.
The Russian arrivals in Turkey also almost doubled in October, hitting 442,970, according to the ministry.
In the first 10 months of 2017, a total of 17.6 million Europeans visited Turkey with a nearly 1.6 percent year-on-year decrease, according to the ministry.

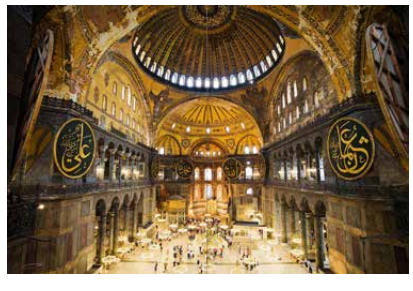
Russia thus became the top tourism market for Turkey by taking a 15.7-percent share in total arrivals in the first 10 months of the year, followed by Germany and Iran, which took 11.5 percent and 7.3 percent of share, respectively. Georgia and the United Kingdom ranked fourth and fifth in the top five list.
Regarding the October data, the top five senders for Turkey's tourism sector ranked the same: Russia, Germany, Iran, Georgia and the U.K.

Amid a series of bomb attacks, a failed coup attempt and the diplomatic crisis with Russia, the number of foreign tourists visiting Turkey plummeted to 25.3 million in 2016 from 36.2 million in the previous year. These negativities slashed Turkey's tourism revenues in 2016 to $22.11 billion from $31.46 billion in 2015.
Numbers turned around in April, thanks to the surge in the number of Russian tourists, and data for the third quarter of 2017 showed a rebound of nearly 40 percent year-on-year.

THE BEST TOURİST ATTRACTİONS İN TURKEY

Packed to the brim with ancient monuments left over from a parade of conquerors and endowed with showcase scenery that never fails to impress, Turkey is a dazzling destination that straddles Asia and Europe. Our vibrant culture, famous food, and vast history wow all who venture here, while our glorious landscapes - from the sun-soaked Mediterranean to the mighty mountains and arid steppe... are highlights in themselves. Whether you want to lap up the Byzantine and Ottoman glories of Istanbul on a city break, laze on the beach, delve into history wandering through ruins such as Ephesus, or see some of the world's most surreal panoramas in Pamukkale and Cappadocia, our country has attractions galore

AYA SOFYA



Renowned as one of the most beautiful buildings in the world, the spellbinding Byzantine glory of the Aya Sofya Museum (Hagia Sophia) is not only one of the top things to do in Istanbul, but also in Turkey. The staggering bulk of its exterior is rimmed by the delicate minarets added after the Ottoman conquest, while the sumptuous and cavernous frescoed interior is a grand reminder of old Constantinople's might and power. This famed monument is a must-do for every tourist visiting the country.

EPHESUS

Not to be missed, the mighty ruin of Ephesus is a city of colossal monuments and marble-columned roads. One of the most complete, still-standing Roman cities in the Mediterranean region, this is the place to experience what life must have been like during the golden age of the Roman Empire. A sightseeing trip here will take at least half a day to cover the major highlights and longer, if you really want to explore, so make sure that you plan your visit so you don't feel rushed.

Of all the ruins and archaeological attractions in Turkey, Ephesus is the most famous. Tourists from around the world come here to walk down the well-preserved Roman streets, gaze at the mighty monuments, and soak up the ancient soul of this ruined city.

Many travelers use the picturesque village of Selçuk (right beside the ruins) as their base, but you can also easily visit from the nearby seaside town of Kuşadası or the city of İzmir. Wherever you base yourself, allow enough time to explore. You'll find plenty of things to do in Ephesus and so much history to absorb, and even a short tour of the highlights will take half a day.

Arkadiane

To the west of the baths lay the Old Harbor, now an area of marshy ground. Immediately south of this group of buildings is the Arkadiane, a fine arcaded street running east from the harbor to the Great Theatre, which stood facing a long square. The effect of this magnificent avenue, built by Arcadius (the first Eastern Emperor) around AD 400, was further enhanced by an elaborate gate at either end.

Great Theatre

Construction of the Great Theatre of Ephesus began in the reign of Claudius (AD 41-54) and was completed in the reign of Trajan (AD 98-117). It is particularly impressive, both for its great size and for the excellent state of preservation of the orchestra and the stage buildings. It was here that St. Paul preached against the cult of Artemis and inveighed against the guild of silversmiths responsible for its shrines.

The theater's three by 22 tiers of seating, divided into sections by 12 stairways, could accommodate an audience of some 25,000. If you climb to the top, there is a fine view extending down to the Old Harbor. There were also staircase tunnels leading to the upper tiers. The stage wall was originally three-stories and 18 meters high but is now preserved only to the height of the lowest story. It was elaborately articulated, with columns, niches for statues, and richly decorated cornices. In the west terrace wall is a Hellenistic fountain-house in the form of a temple in antis, which in spite of its ruinous state is notable for the clarity and simplicity of its structure.

Marble Street

Along the east side of the Lower Agora, the Marble Street leads from the Koressos Gate but has only been excavated from the Great Theatresouthward. This fine marble-paved street, once lined with arcades and decorated with statues, continues south to the Library of Celsus. Along the middle are a series of holes through which surface water flowed into drains.

CAPPADOCIA

The surreal swooping rock valleys of Cappadocia are every photographer's dream. Cliff ridges and hill crests are home to rippling panoramas of wave-like rock or wacky-shaped pinnacles that have been formed by millennia of wind and water

action. And if you don't feel like hiking for the views, this is one of the world's top destinations to take a hot air balloon ride. If the lunarscape isn't enough to tempt you, nestled in these valleys are the frescoed rock-cut churches of the Byzantine Era, when this area was an important early Christian site.

High on every tourist's Turkey hit-list, Cappadocia is an enchanting region of swirling volcanic-rock landscapes that seem to have been fashioned by mischievous elves. Humans have settled in this area since the Bronze Age and have left their own mark on this weird and wacky moonscape by burrowing into the soft volcanic rock to live. The star sightseeing attractions are villages carved out of the hillsides, Byzantine era rock-cut churches with dazzling frescoes, and labyrinth underground cities where early Christians once hid from invaders. It's a magical wonderland brimming with things to do that both nature lovers and history buffs can appreciate.

Göreme Open-Air Museum
Just outside of Göreme village is the UNESCO-protected site of Göreme Open-Air Museum, a monastery cluster of rock-cut churches and monk-cells that hold fabulous frescoes. The complex dates from the 10th to 12th centuries, when Cappadocia was an important Byzantine religious center. There are several churches and chapels within the complex, but the most important are the Elmalı Kilise (Apple Church), with its Ascension fresco above the door; the Azize Barbara Şapeli (Chapel of St. Barbara), with its red-ochre interior decoration; Yılanlı Kilise(Snake Church), with its wall-paintings of St. George and interesting fresco of the hermetic hermaphrodite St. Onuphrius; the stunning and superbly restored frescoes of the Karanlık Kilise (Dark Church); and the cavernous Tokalı Kilise(Buckle Church), with its dazzling wall-paintings that cover the entire barrel-vaulted chamber. The museum is one of Turkey's top highlights and it's Cappadocia's most famous tourist attraction.

Hacibektaş
Hacibektaş is a pilgrimage center for the followers of the Bektaşı order of dervishes, founded by the philosopher and Sufi Haci Bektaş Veli. The museum here is a place of great devotional worship, including Haci Bektaş Veli's tomb as well as many interesting exhibits about the faith.
On the road between the towns of Nevşehir and Hacibektaş is the village of Gulşehir, which is home to two interesting attractions. The rock-cut monastery of Açık Saray was probably used by monks in the 6th and 7th centuries and contains a number of interesting cave-cut rooms. A little further down the highway is the 13th-century St. Jean Church, which is rarely visited despite having an interior absolutely covered in gloriously colorful and well-restored frescoes.

Ürgüp
Ürgüp is a popular place to stay for visitors to Cappadocia because of its boutique hotels and good restaurant scene. Relics from the Seljuk period include the Karamanoğlu Mosque (which dates to the 13th century) and the Altı Kapı Türbesi (a tomb built by a Seljuk prince for his family). The old townsection, which runs up the hill away from the modern center, also has some lovely old Ottoman stone houses, many of which have been finely restored and are now boutique hotels.
Nearby is the small village of Mustafapaşa, which until the 1923 Population Exchange with Greece had a mixed community of Greeks and Turks, and many of the old stone houses that still line the quiet cobblestone streets are the remnants of its now departed Greek inhabitants. The Agios Konstantinos-Eleni Church is right in the center of town, while the 12th-century Ayios Vasilios Church is found by walking up the hill to the ridge. Some small cave churches are also just out of town in the aptly-named Monastery Valley.

TOPKAPI PALACE

Sumptuous beyond belief, the Topkapı Palace takes you into the fantastical, opulent world of the sultans. It was from here that the sultans of the Ottoman Era carved out an empire that would extend up into Europe and down through the Middle East and into Africa. The interiors, with their decadently exuberant tiling and lavish jeweled decor, are an unforgettable peek into the Ottoman's power base. The surrounding public gardens were once the sole domain of the Royal Court but are now open to the public and provide a tranquil, green respite from the city streets.

PAMUKKALE

One of Turkey's most famous natural wonders, the pure white travertine terraces of Pamukkale ("Cotton Castle" in English) cascade down the slope looking like an out-of-place snowfield amid the green landscape. Although the travertines are themselves a highlight of a Turkey trip, the vast and rambling ruins of Roman Hierapolis, an ancient spa town, lie on the top of this calcite hill, providing another reason to visit. For the best photographs, come at dusk when the travertines glow as the sun sinks below the horizon.

SUMELA MONASTERY

With its stunning, lonely setting, built into a cliff face, Sumela Monastery (Monastery of the Virgin Mary) is the star attraction for visitors along the Black Sea Coast. Wandering around this abandoned religious complex, with its church interiors crammed with dazzling and vibrant frescoes, is a must for anyone who makes the long journey to Turkey's northeast region. The monastery first opened during the Byzantine era and was only closed in 1923.

MOUNT NEMRUT

The top sightseeing drawcard for Eastern Turkey, Mount Nemrut's summit funerary mound is scattered with the broken remnants of once mammoth statues, which guarded it. This weird and lonely place has to be one of Turkey's most peculiar archaeological sites. The giant stone heads of long-forgotten gods stare out from the summit, casting an eerie atmosphere over the barren mountaintop. The time to come is at sunrise, so you can watch the statues as they loom out of the dark.

ANI

The derelict buildings of the powerful Silk Road city of Ani sit abandoned on the plains close to Turkey's modern border with Armenia. Once the Armenian capital, Ani's golden age came to an end in the 14th century after Mongol raids, earthquake destruction, and trade route tussling all played their part in the city's decline. The beautiful red brick buildings still crumbling away amid the steppe grass have a mesmerising effect on all who visit. Don't miss the Church of the Redeemer or the Church of St. Gregory, with their elaborate stone masonry and fresco remnants still visible.

ASPENDOS

Just south of Antalya, the jaw-dropping mammoth bulk of the Roman Theater of Aspendos celebrates the pomp and ceremony of Marcus Aurelius' rule. Considered the finest surviving example of a classical age theater still standing in the world, it is one of antiquity's star attractions. Although the theater is the main reason for a visit here - and for most visitors on a half-day trip from nearby Antalya or Side the theater is all they see - there are more ruins to explore over a vast hilly area if you have time.

CRUISING THE MEDITERRANEAN

Turkey's Mediterranean coastline has ruins galore and bags of things to do, but for many people, it's all about soaking up the sun while enjoying the gorgeous coastal views. Cruising on a yacht is the number one activity for visitors to Bodrum and Fethiye for good reason. The steep forest-clad slopes, hidden coves sporting tiny white sand beaches, and hundreds of scattered islands are the perfect place for exploring by sea. Even diehard landlubbers will be impressed. One of the most famous trips is known as the "Blue Cruise" and travels from Fethiye south down the coast until disembarking near Olympus, home to the famous natural phenomenon of the Chimaera.

PERGAMUM

Turkey has an abundance of Greco-Roman ruins, but none can be so romantically placed as ancient Pergamum in modern-day Bergama. Once home to one of the ancient world's most important libraries, Pergamum's remaining temple remnants now preside dramatically on a hilltop. It's an incredibly atmospheric place to explore, with an Acropolis area and a theater cut into the hillside with sweeping panoramic views from its top seating tiers. This is a great place to visit if you want to get a real feel for life in the Roman era.

ÖLÜDENIZ

Impossibly turquoise-blue water. Check. Lush green forest tumbling down a cliff to a white sand beach. Check. The sheltered inlet of Ölüdeniz, just a short journey from Fethiye, is Turkey's most famous beach, and with scenery that might as well have fallen off a perfect postcard, it's easy to see why its popularity hasn't waned. If the beach gets too crowded, it's time to take to the skies and experience the stunning aerial views on a tandem paragliding dive off the summit of mighty Babadağ Mountain, which rises up behind the shore. Oh, did we mention that Ölüdeniz is one of the world's top paragliding destinations? Check.

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