ISRAEL HIGH-TECH
& INVESTMENT REPORT

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# Robotic Spinal Surgery

Mazor Robotics (tase:MZOR) is dedicated to the development and marketing of innovative surgical robots and complementary products that provide a safer surgical environment for patients, surgeons, and operating room staff. Mazor Robotics' flagship product, Renaissance(TM), is a state-of-the-art surgical robotic system that enables surgeons to conduct spine surgeries in an accurate and secure manner. Mazor Robotics systems have been successfully used in the placement of over 20,000 implants in the United States and Europe. Numerous peer-reviewed publications and presentations at leading scientific conferences have validated the accuracy, usability, and clinical advantages of Mazor Robotics technology.

Mazor Robotics' Renaissance Technology Receives U.S. FDA Clearance for Brain Applications

Mazor Robotics Ltd. (tase:MZOR), a developer of innovative surgical robots and complementary products, today announced its Renaissance(TM) platform received U.S. FDA marketing clearance, expanding the applications of the Renaissance system to include the precise positioning of surgical instruments and implants during brain surgery.

The Renaissance technology, a surgical guidance system originally designed for use in spine surgeries, is applicable in brain procedures for many applications including biopsies, shunt placements and neurostimulation electrode placement for deep brain stimulation (DBS). Along with the system's precision, simplicity, and safety profile, the Renaissance System will also provide a frameless treatment solution for brain procedures. Renaissance has already been successfully employed in several clinical brain surgical procedures in Europe. 34 hospi-



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tals globally are currently using Renaissance for the different types of spine surgery.

“While our core is spine surgery, we are thrilled that our technology can be expanded to improve other surgical procedures,” stated Ori Hadomi, chief executive officer. “As neurosurgeons focus on both the spine and brain, brain surgeries represent a large market opportunity that is closely aligned with our current focus. Achieving U.S. regulatory clearance provides us with the opportunity to assist neurosurgeons in improving brain surgery processes and the ensuing clinical outcomes.”

The camera that can see through skin, look inside an egg - and even look around corners

* Breakthrough to be used for medical scans
* Computers ‘trained’ to see through frosted plastic

The letter A with no scattering (top), behind scattering plastic (centre) and re-imaged with the new technique

A camera that can see through skin and even frosted glass has been revealed.

The scientists behind the breakthrough say their research could even lead to cameras with the ability to see around corners.

The Israel team have found a novel trick to make their camera work. Reported in Nature Photonics, it uses natural light rather than lasers.

The technique uses what is called a spatial light modulator to ‘undo’ the scattering that makes objects opaque or non-reflecting.

‘If you want to look to see an embryo developing inside an egg but the eggshell scatters everything, or you want to look through the skin, scattering is the main enemy there, and time-of-flight is not a good solution,’ said Professor Yaron Silberberg of the Weizmann Institute of Science in Israel, who led the research.

His solution uses a phenomenon known as spatial light modulators (SLMs).

SLMs modify what is known as the phase of an incoming light beam. They can corrected the ‘scattering’ of light caused when it hits as object such as skin of frosted glass.

They are made up of an array of pixels that can correct for this by selectively slowing down some parts of the beam and allowing others to pass untouched - when an electric field is applied to a pixel, it changes the speed at which light passes through it.

The camera that sees round corners: Incredible video shows MIT laser technology that ‘bounces’ light off hidden objects

* New ‘spy in the sky’ radar tracking camera that can see around corners‘Our results bring

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wavefront-shaping closer to practical applications and realize the vision of looking through walls and around corners,' the researchers said.

"Our results bring wavefront-shaping closer to practical applications and realize the vision of looking through walls and around corners."

"Our results bring wavefront-shaping closer to practical applications and realize the vision of looking through walls and around corners."

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H1/2012 venture capital investments down 11 percent

Q2/2012 Israeli VC fund first investments lowest in a decade

The following are the findings of the IVC-KPMG Quarterly Survey conducted by the IVC Research Center in cooperation with KPMG Somekh Chaikin Israel. This survey reviews venture capital investments by Israeli venture capital funds, and foreign and other investors, based on reports from 123 investors of which 47 are Israeli management companies and 76 are other – including foreign – investment entities.

Israeli venture capital investments in the first half of 2012 reached $936 million, a decrease of 11 percent from $1.05 billion invested in the first half of 2011, but 62 percent above the $577 million invested in the corresponding 2010 period.

In the second quarter of 2012, 128 Israeli high-tech companies raised $453 million from venture investors – both local and foreign, 6 percent below $483 million raised by 142 companies in Q1/2012 and 20 percent below the $569 million raised by 145 companies in Q2/2011. (Chart 1)

Seventy-seven companies attracted more than $1 million each. Of these, four raised more than $20 million, 11 raised between $10 million and $20 million and 17 raised from $5 million to $10 million each.

The average company financing round was $3.54 million, compared to $3.40 million in Q1/2012 and $3.92 million in Q2/2011.

Israeli VC Fund Investment Activity

In the first half of 2012, Israeli venture capital funds invested $225 million in Israeli companies, compared to $297 million and $169 million invested in H1/2011 and H1/2010, respectively. The Israeli VC fund share was 24 percent, compared to 28 percent share in the first half of 2011.

"The percentage of high-tech investment from Israeli venture capital firms is continuing to decline as capital available for new investments is shrinking," observed Koby Simana, CEO of IVC Research Center. "Despite the continuing decline in their share, Israeli VC funds are still at the core of venture capital activity in Israel. In light of their ongoing difficulties in raising new funds, we expect a further decline in VC high-tech investments throughout this year."

In the second quarter of 2012, Israeli venture capital funds invested $106 million, a decrease of 11 percent from the previous quarter and a 34 percent decrease from the amount invested in the second quarter of 2011.

The Israeli VC fund share was 23 percent, compared to 25 percent ($119 million) in Q1/2012 and 28 percent ($160 million) in Q2/2011. The remainder of capital invested came from foreign as well as other Israeli investors.

In Q2/2012, these investments reached $217 million or 48 percent of all transactions, which was in line with the 49 percent of the previous quarter, but well above 31 percent in Q2/2011.

significant returns for Israel's economy and local VCs. The skilled and talented local workforce will most likely continue to be utilized by multinationals that have already invested in the industry, recognizing Israel as one of the most innovative places in this field. While new media-related industries are thriving, it is important to remember that the semiconductor industry is the backbone of innovation and the 'technology enabler' more than any other sector."

In Q2/2012, the Internet sector led capital rais-

ing for the second time in the past decade, with $129 million (29 percent) of total capital raised. Life sciences followed with $110 million (24 percent), a 15 percent decrease from the previous quarter, but equal to the amount raised in Q2/2011. Communications attracted $78 million or 17 percent of total capital raised in the quarter.

Abby Joseph Cohen: Israel is high tech superpower

Speaking at the Technion, the Goldman Sachs senior strategist said that Israel and the US are top of the global high tech table.

"We're used to seeing China and India as future technological superpowers but that's a mistake. Those two countries don't have high tech in the Israeli and US sense, " Goldman Sachs partner and senior US investment strategist Abby Joseph Cohen told the Technion, Israel Institute of Technology board of governors meeting yesterday in the Yitzhak Modai Memorial Lecture entitled "Economic Growth and Innovation."

She said, "China and India manufacture products requiring relatively simple technology, and a cheap workforce, and not products with high added value. Within the context of advanced technology, the US and Israel are top of the table and that's an excellent reason for optimism." Also high on the list, she said, were Switzerland and Germany with China, India and Brazil bringing up the rear.

She described the Technion-Cornell Innovation Institute in New York City, the joint venture between the two universities for applied engineering and science research as a most important enterprise merging private and public resources to promote education for science and technology through understanding that education is a prerequisite for economic growth and sustainability. She said, "Investment in education is the most important economic investment and the Technion Cornell University venture in New York is an excellent example of such an investment.

She continued, "Economists love to talk about GDP and the state of the capital market and other variables as indices of a country's economic situation whereas here I'm talking about indices that influence the long term economic situation, and quality education is the most significant single source influencing long term economic growth. We must understand that higher education is an integral part of effective economic policy."

How hi-tech robots will prevent the next IDF soldier kidnapping

A Rishon Lezion academic institution is at the cutting edge of robotics technology that will prevent future IDF soldier kidnappings.

While there is no guarantee that Gilad Shalit will be the last IDF soldier to be kidnapped and imprisoned in Gaza, the army has an advantage today that it didn't have five years ago, when Shalit was nabbed: A fully mechanized and computerized patrol system that can provide full 24/7 coverage of events at the border, allowing soldiers to quickly and efficiently - and safely - respond to problems. The technology for this sophisticated robotic system was developed at he Research and Development Institute for Intelligent Robotic Systems, of the Computer Science Department of the College of Management Academic Studies (COMAS) of Rishon Lezion (Hamichlala leMinhal), and last week some of the top robotics geniuses from the U.S. visited the College in order to get a first-hand look at the new technologies the Institute is creating.

The Robotics Institute, among other things, develops artificial intelligence algorithms for robots to be used by Israel's military and secu-

rity forces, to help guard Israel's borders and prevent kidnapping of soldiers by infiltrators. Already in production for several years, the Institute was the brains behind the development of the Genius Robotic Patrol system, which is in use on the Gaza border, and is produced jointly by Elbit and Israel Aircraft Industries. The system basically replaces infantry and jeep patrols along the border fence. An unmanned smart vehicle – controlled from a base station by a live soldier – follows the border fence road, avoiding obstacles automatically.

If it detects a problem – a breach in the fence, or the presence of an individual or object that shouldn't be there – it immediately transmits pictures and data to the control center. At that point the soldiers in charge can decide how to handle the situation; for example, they can instruct one of the fighter pilots in the sky patrolling the fence area to zero in on the target, eliminating it. The robots actually travel in a fleet, says Dr. Yehuda Elmaliach, founder and director of the Institute. "This way, the area is fully covered even when one of the robots is engaged in a specific mission. Another robot that is part of the patrol can take over its duties, thus preventing the use of diversions by terrorists to get over the border or launch an attack," he says. This is the first land-based unmanned rover used for defense purposes (all other systems are either seagoing or airborne).

The visitors, who included 13 university presidents and professors, included some of the leaders in robotics technology in the U.S. Among the delegation were Leo Morton of the University of Missouri, Dr. John L. Anderson of the Illinois Institute of Technology, and Dr. Gary D. Russi of Oakland University. All three schools have advanced robotics departments, and have worked on developing defensive systems for U.S. security services. The visitors were treated to the latest developments in robotics for security and defense purposes – all of which, says Dr. Elmaliach, can help save the lives of soldiers.

The Institute, headed by Dr. Elmaliach, was founded in 2008 on the initiative of Dr.Shmuel Itzikowitz with the help of the parents of three IDF soldiers, Benny Avraham, Adi Avitan and Omar Souad, who were kidnapped and killed by Hezbollah in 2000.

The Institute has set itself the goal of creating robot-powered applications for the military and security forces. It works closely together with the IDF Engineering Corps on projects to find technological solutions to prevent the circumstances facilitating the kidnapping of soldiers, an issue which is still very much on the mind of Israelis, with the prolonged captivity and recent release of IDF soldier Gilad Shalit. An increasing amount of robotic technology is being incorporated into militaries and security bodies around the world. According to the projection of the American FCS (Future Combat Systems), by the year 2015, one third of the US military will consist of unmanned forces (robots).

During the event, Prof. Itzikowitz introduced a video presentation about the events following the 2000 kidnappings, and discussed the role of Academia in the defense of Israel. Dr. Elmaliach, an expert in artificial intelligence and robotics, who discussed the vision and activities of Robots in the Battle Field, joined him. In addition, IDF Colonel (Res.) Lior Lotan, former commander of an elite Special Forces unit, and one of the world's foremost experts in hostage situations and hostage negotiations, discussed the Israeli Experience of Counter Terrorism – Understanding the Threats, Counter Strategy, Tactics and Future Trends. Lotan was awarded the IDF Chief of Staff Medal of Honor for his part in an operation for the attempted release of abducted IDF solder Nachshon Waksman and was in charge of the negotiations in which Israel received the bodies of the 3 soldiers kidnapped

and killed in 2000.

Water from the sea: the risks and rewards of Israel's huge bet on desalination

Abraham Tenne tilts his head upward and takes a gulp of water from a paper cup. But this isn't your average cup of water. It's just come directly from the briny Mediterranean Sea. At the Ashkelon Desalination Plant, a 28-acre complex some 40 miles (70 km) south of Tel Aviv, 15,000 to 16,000 cubic meters of seawater is converted into fresh water every hour -- if you can imagine it, that's about 15 to 16 million one-liter plastic bottles. The plant churns out 15 percent of Israel's yearly water supply.

The technology that turns the sea into fresh, potable drinking water isn't new, but now it's changing the game for Israel, where a severe water crisis threatens the country's very existence.

The country's population of 7.8 million people is growing at a rate of 1.8 percent a year. Meanwhile, severe drought has plagued this largely desert nation over the past decade -- it's been so severe that Tenne, chairman of Israel's Water Desalination Administration, compares it to biblical misfortunes: "If you remember the story of our ancient fathers who had seven good years and seven bad years in the time of Moses, in Egypt, we had the same seven years. Only it was in the last seven years."

Although in 2012 the country experienced a cold and wet winter that caused water levels to increase once again, there's no expectation the water shortage will end anytime soon.

That's because Israel's aquifers have been drying up, and the Sea of Galilee, known here as "Lake Kinneret," which supplies the country with 35 percent of its freshwater needs, has fallen to extremely low levels, creating a large gap between supply and consumer demand. Officials believe it is only going to get worse unless something drastic is done.

Israeli drone sensor pinpoint terror sites

The Israel Air Force is testing a sensor designed to enable its drones to spot militant hideouts and weapons, a media report said Sunday.

Israeli drones carry out surveillance missions over Lebanon and Gaza Strip, where tunnels are used for smuggling weapons and shielding militants from airstrikes.

Elbit Systems Ltd., Israel's largest defense electronics company, develops the sensor, Xinhua quoted The Jerusalem Post as saying.

The sensor uses imaging technology that shows wavelengths of materials, enabling drone operators to identify the unique spectral signature of targets, according to the report.

"It means that if a bush doesn't match the natural vegetation in an area, we will be able to detect it," an IAF officer told the Post.

Elbit said it has designed the sensor for installation on its Hermes 900, a medium-sized drone which entered service with the IAF two years ago, and on the older Hermes 450.

Index Ventures new €350m fund to include Israel investments

Index Ventures today launched its new €350 million early stage technology fund, which will invest in European and Israeli companies "looking to build global category leaders".

Index Ventures said that the new fund is the final piece of €1 billion of new capital raised in the last 12 months to invest in early stage and growth technology as well as life sciences companies. "Every week our investment team spends time in cities like Amsterdam, Berlin,

London, Madrid, Milan, Moscow, New York, Paris, San Francisco, Stockholm, and Tel Aviv and we are fortunate to meet amazing entrepreneurs. These entrepreneurs are driven by the incredible opportunities they see to change the status quo. They see a world in which few industries are safe from transformation when you combine the mainstream reach and relative capital efficiency of the Internet, mobile and cloud computing with disruptive new business models like marketplaces and SaaS."

Index Ventures is optimistic about Europe, despite the current crisis on the continent, saying, While technology adoption is increasingly rapid and worldwide, we continue to believe that Europe will be fertile ground to discover and help develop world beating innovations. In fact, even while Europe is facing massive macroeconomic challenges, at the same time we have seen very clearly that European startups are coming of age."

Index Ventures was founded in 2006 and manages $4.7 billion. Originally based in Switzerland, it now has offices in London and San Francisco. It uses the Eurovision and UEFA definition of Europe, which includes Israel. 40% of its current portfolio companies are in North America, 10% are Israeli, including OpTier Ltd., MyHeritage Ltd., NovoCure Ltd., Soluto Ltd.,Worklight Ltd., and Zend Technologies Ltd.

Blue rose comes to China through Israeli technology
China's Fujian Academy of Agricultural Sciences has signed an agreement to use Israeli technology to grow blue roses – considered to be a special and luxurious flower in Chinese culture – in the city of Fuzhou.

A farm in Fuzhou will feature Israeli technologies that improve fish farming, advanced dairy making equipment, and clean chicken coops, along with the blue roses, in an attempt by the Chinese to market foreign products to local companies.

"The collaboration between the agricultural research institute and the Israeli companies will be commercial and will include investors from the private sector in China, such as one of China's largest supermarket chains," said Avner Shochat, who represents the Israeli companies involved in this collaboration.

In China, the blue rose is a symbol of one's belief that they can capture seemingly unattainable love. In Chinese folklore, the son of a gardener once married the daughter of a Chinese emperor because of his ability to find the flower before other men who were in pursuit of her hand in marriage.

The agreement also provides copyright and intellectual property protection for the Israeli technologies and products.

4 Israelis make girls In tech 100 in Europe
Girls in Tech London picked the top 100 women in 19 countries.

Four Israelis made the list of the 100 most influential women in high tech in Europe drawn up by Girls in Tech London Group, the UK branch of Silicon Valley-based Girls in Tech, which seeks to promote women in high tech.

Girls in Tech London picked the top 100 women in 19 countries - the UK, Ireland, Spain, France, Germany, Italy, Belgium, the Netherlands, Denmark, Sweden, Norway, Finland, Latvia, Lithuania, Poland, Russia, Turkey, Greece and Israel - on the basis of their leadership and excellence in innovation and technology. The top 100 are not ranked in any particular order.

The four Israelis in the rankings are: Orit Hashay, Brayola Ltd.; Gali Ross, Razoss Ltd.;

Amit Knaani, ooVoo; and Moran Bar, Venture-Geeks
Hashay is a serial entrepreneur who is behind customer opinion sites mit4mit (for wedding services), Ramkol (megaphone in Hebrew, about service providers), and other companies. She was an investment manager at Carmel Ventures for two years, until recently. In February 2012, she launched her latest venture, Brayola, which uses a virtual drawer and algorithm to compare bras of other women and adjust for size and preferred style, enabling women to easily buy bras online.

Gali Ross co-founded Razoss with Rami Raz in 2008. The company is developing personalized tool bars. Serial investors Yossi Vardi and Gigi Levy have invested in the company.

Amit Knaani is product manager at ooVoo, which offers video chat solutions. Together with Yami Glick, she founded Vikido, which develops safe social platforms for children and their families. She previously served as product manager at Wix Ltd. and worked at kids channel Noga and at Doctors.co.il.

Moran Bar founded technology blog Newsgeek, where she manages its incubator blog Venture-Geeks, which offers mentors from among Israel's top venture capitalists and entrepreneurs, including Pitango Venture Capital managing general partner Rami Beracha; Rhodium Ltd. CEO Daniel Recanati, Genesis Partners general partner Eden Shochat, Face.com CEO Gil Hirsch, and Paypal Regional Manager for Israel and South Africa Oded Zahavi.

This is not the first time that Girls in Tech has praised Israeli women entrepreneurs. Two months ago,Buzzdoes won a "Lady Pitch Night" competition in France, held by La Cantine (Silicon Sentier), Orange France, and Girls in Tech. Buzzdoes, co-founded by CTO Lina Bachar Kirshon, assists application developers to stand out among the millions of applications in the market. Instead of spending money on advertising campaigns on the Web and via cell phone, their marketing is done virally, by word of mouth.

Unit 8200 and Israel's high-tech whiz kids

UPI Israel's highly secretive Unit 8200 of Military Intelligence is increasingly seen to have played a leading role with the United States in developing a powerful new cyberweapon known as W32.Flame that attacked Iran's oil industry in April.

Veterans of the unit, the equivalent of the U.S. National Security Agency and Britain's Government Communications Headquarters, have in recent years been at the cutting edge of building Israel's formidable high-tech sector into what the Financial Times calls a "global technology powerhouse."

Indeed, the proliferation of Unit 8200 alumni across the spectrum of Israel's high-tech industry suggests that they probably run it and that there are strong security links between the unit and civilian high-tech outfits.

Israel's high-tech exports are estimated to be worth $18.4 billion a year, comprising more than 45 percent of the Jewish state's exports, Central Bureau of Statistics data indicate.

Unit 8200 whiz kids have founded scores of high-tech start-ups in recent years.

Gil Schwed, reputed to be one of Israel's youngest billionaires, launched CheckPoint, one of the country's leading high-techs with major dealings in the United States.

The Zisapel brothers, Yehuda and Zohar, sold and floated a dozen companies for hundreds of millions of dollars.

"It's almost impossible to find a technology company in Israel without people from 8200 and in many cases the entrepreneur, the manager or the person who had an idea for the project will be someone from 8200," said Yair Cohen, a former brigadier general who once commanded Unit 8200.

Cohen heads the intelligence cyber department of Elbit Systems, a leading Israeli defense company.

Yossi Vardi, who founded Israel's first software company in 1969, observed, "More high-tech billionaires were created from Unit 8200 than from any business school in the country."

Unit 8200, the Haaretz daily noted recently, "is the most important one for the Israeli economy" because it has produced innovative and trailblazing high-tech entrepreneurs who have put the Jewish state's cyber industry on the map.

Aharon Zeevi Farkash, another former commander of Unit 8200, is the founder and chief executive of FST21 set up in 2007. Seven of the 10 engineers at his company are ex-Unit 8200 personnel.

The Financial Times noted that this company's "main product is a mix of technologies, combining hardware and software to suit a specific need.

"Such technological mash-ups have long been regarded as a specialty of Israel's high-tech entrepreneurs.

"Finally, and perhaps most importantly, the company bears the unmistakable stamp of Israel's most successful and secretive technology incubator … Unit 8200."

Unit 8200 vets who launch new outfits usually recruit from the unit.

"When hiring new engineers and programmers, they typically turn to their former unit, safe in the knowledge that the military has invested heavily in selecting and training its recruits," the Financial Times reported.

The brain drain from Unit 8200 is becoming a problem, one that also exists in the United States and other industrial countries where the brightest and the best are often lured from government work to the high-paying private sector.

Israel's military "is losing in its struggle with high-tech and start-up companies as more talented people prefer to earn a fat salary than serve in the unit," said Yuval Dror of Haaretz.

Military officials say efforts are under way to provide high flyers in Unit 8200 with enough incentives, though not hefty salaries, to stay in the unit.

"The army … understands that it has to invest special resources in technological manpower, that they need to get conditions, service plans, benefits," one senior officer explained.

He stressed that Unit 8200 is a unique military institution because "we allow free thinking and creativity in order to allow the technology people to deal with their tasks."

Unit 8200 is widely seen to have been a key player in the Flame cyber attack on Iran, and some Arab states, in recent weeks.

Drip irrigation, the bullet to wonder agriculture in Israel

Rain falls on farms across Israel all the time, but it does not come from the sky. It is drip irrigation. Many years ago, the Israelis found themselves in the desert and yet they wanted to produce their own food all year round. To achieve this goal, they had to think outside the box.

They saw irrigation as the only way out. Today, Israel is the leading source of simple-to-use, but effective irrigations systems across the world.

During the recently-concluded 18th Agritech Conference in Tel Aviv, Israel, many of these irrigation systems were exhibited. Israel, although a desert, exports food, thanks to innovations like this.

It was not just drip irrigation that the Israelis discovered. They improved it to suit different settings, including farmers in developing countries like Uganda. One such example is the family drip irrigation system (FDIS), developed by the International Programme for Arid Land Crops at Ben-Gurion University of the Negev in partnership with Israeli irrigation company Netafim.

FDIS is a simple irrigation technology, which is combined with gravity-powered low water pressure. In order to spread the technology, Israel is partnering with local government agencies and non-governmental organisations to introduce it in countries across Africa to smallholder farmers at a low cost.

These innovations are also empowering farmers in the dry Sahel region across sub- Saharan Africa to combat problems of water scarcity, and in countries like Uganda, there is growing belief that this is the way to go if famine is to be stemmed.

How it works

For the smaller family kit that caters for a small garden, the system includes a water container, which can be a big bucket. The bucket (of say 20litres) is hoisted on an upright pole and fitted with a pipe that runs through the vegetable garden.

The pipes should have tiny holes that are strategically placed near the stems of the crops to let out water. All that a farmer does is fill the water container with water and gravity will make it move down to the garden.

In Uganda, there are a few agri-business companies that are promoting a fairly larger family irrigation system. Among these are Agromax and Balton, plus individual farmers like Abbey Kazibwe of Nansana, a Kampala suburb. This caters for at least a quarter of an acre.

The basics include a water tank of about 200-300 liters. It is then placed 1.5metres above the ground, a main water pipe is fitted on the tank, with valves to let out or stop the water, and feeder lines set within the rows of the vegetables.

A quarter of an acre can take as many as 6,700 cabbages or 10,000 tomatoes.

The cost ranges from sh2m to sh3m for outdoor vegetable farmers and sh7m for a fullyconstructed greenhouse farm.

According to Samuel Peled, an official with Agromax, the notion that Ugandan farmers do not need irrigation is not true.

“This system helps you produce all year round,” he says, adding that it enables the farmer to determine when to produce crops for better prices in the market.

Balton is promoting a greenhouse farmers’ kit, which is similar to the Israel system, to boost the growing of high quality tomatoes and other vegetables by Ugandans. According to Balton managing director Zeev Shiff, the kit is simple to use.

“Since most Ugandans depend on agriculture, the kit was developed to help them modernize their farming activities,” he said. According to Abbey Kazibwe, who practices

greenhouse farming, Ugandans can adopt to change and think like the Israelis if they are sensitised.

"The climate is becoming less dependable and we must walk to the Ugandan farmer and tell him that we must change. Modern farming does not need a lot of space, but rather technology," he says.

Kazibwe has organised a free exhibition for farmers mainly engaged in vegetable farming at his home in Nansana on June 8.

"I want to do my part by sharing with the Ugandan farmer what I know," he says.

Cure laser cures your pain right at home
Arutz Sheva met with the people behind B-Cure Laser, a cutting edge technology in soft laser therapy.

An Israeli invention, B-Cure Laser provides clinical soft laser power in a light, portable, rechargeable and user friendly medical device. It helps in the rapid, non-invasive and efficient treatment of pain, wounds, burns, sports injuries, inflammation, acne, and skin rejuvenation.

B-Cure Laser is the first portable soft laser device in the world with the healing power equal to that of a full-sized, stationary, expensive soft-laser machine used only in hospitals and prestigious care facilities.

B-Cure uses Soft Laser technology, a low level laser beam in the range of 1-1000mW. The soft laser affects the skin's surface and simultaneously penetrates the skin without heating or hurting the skin.

"[Soft Laser] technology has existed for many years but they've minimized it for home use," said project manager Mor Schlosser.

B-Cure is "a rechargeable and portable device which people can use not only to treat themselves in a clinic but also treat themselves at home," she added.

"Many years ago this technology was only available in the clinics," said Schlosser. "People used to undergo treatment once a week. It was not very effective and the cost was higher. Now [with this technology] we like to say that it's like having three different clinics at home: a pain clinic, an orthopedic clinic and a dermatology clinic. There are no limitations on the number of treatments you can have."

She explained that B-Cure treats not only the pain itself, but also the source of the pain.

"It bio-stimulates the cell and gives it the energy it requires in order to operate in our body," she said.

Israeli scientists find way to delay cell death
Prof. Atan Gross of the Weizmann Institute, one of the researchers that developed a new technique that could bring advances in cancer treatment.

Israeli Researchers have discovered a protein that is central to delaying cell death, which "could lead to new approaches to treating cancer."

The findings, led by Hebrew University graduate student Chen Hener-Katz and involving a collaboration between Prof. Assaf Friedler of the Hebrew University and Prof. Atan Gross of the Weizmann Institute, were published in the Journal of Biological Chemistry in an article titled "Molecular Basis of the Interaction between Proapoptotic Truncated BID (tBID) Protein and Mitochondrial Carrier Homologue 2 (MTCH2) Protein."

The discovery by Prof. Gross of the MTCH2 protein as well as its relationship to tBID, allowed the research team to develop a technique that mimics apoptosis.

Programmed cell death, or Apoptosis, is a critical defense mechanism against the development of abnormal cells like cancer, according to HealthCanal.com. “Cancer cells usually avoid this process due to mutations in the genes that encode the relevant proteins,” it continues. “The result is that the cancer cells survive and take over while healthy cells die.”

”These protein segments could be the basis of future anti-cancer therapies in cases where the mechanism of natural cell death is not working properly,” said Prof. Friedler, head of the school of chemistry at the Hebrew University. ”We have just begun to uncover the hidden potential in the interaction between these proteins. This is an important potential target for the development of anti-cancer drugs that will stimulate apoptosis by interfering with its regulation.”

The potential ramifications of this discovery was described in the Weizmann Institute’s 2010 Update on Cancer Research: “Scientists can use this newly gained knowledge to devise novel therapeutic methods. If clinicians could regulate the production and activity of MTCH2, they would be able, for instance, to ‘turn on’ mitochondria apoptosis in cancerous cells and turn it ‘off’ in the brain cells of patients with Parkinson’s and Alzheimer’s diseases.”

Light trick could allow docs to see through skin

Light trick could allow docs to see through skin

Scientists in Israel have found a novel way to get images through “scattering” materials such as frosted glass or even skin, or even “see around corners”.

Much research in recent years has focused on correcting for scattering, mostly for medical applications.

But the new trick, reported in Nature Photonics, is quick, simple and uses natural light rather than lasers.

It uses what is called a spatial light modulator to “undo” the scattering that makes objects opaque or non-reflecting.

A camera that can “see around corners” garnered much attention in 2010, using a series of timed laser pulses to illuminate a scene and working out what is around a corner from the timing of the reflections.

The prototype device was just one of a great many research efforts trying to crack the problem of scattering.

But for some applications, the “time-of-flight” approach that the laser-based camera uses is not sufficient.

“If you want to look to see an embryo developing inside an egg but the eggshell scatters everything, or you want to look through the skin, scattering is the main enemy there, and time-of-flight is not a good solution,” explained senior author of the study Yaron Silberberg, Weizmann Institute of Science in Israel.

For those kinds of problems, Prof Silberberg and colleagues at the Weizmann Institute of Science in Israel have pushed the limits of what spatial light modulators (SLMs) can do.

SLMs modify what is known as the phase of an incoming light beam. Like a series of waves on the ocean that run over rocks or surfers, the waves in light can be slowed down or redirected

when they hit scattering materials.

SLMs are made up of an array of pixels that can correct for this by selectively slowing down some parts of the beam and allowing others to pass untouched - when an electric field is applied to a pixel, it changes the speed at which light passes through it.

Prof Silberberg and his team first set up their SLM by shining light from a normal lamp through a highly scattering plastic film and allowing a computer to finely tune the SLM until they could see a clear image of the lamp through the film.

Keeping the SLM set this way, they were then able to obtain clear images of other objects through the film - the SLM effectively turns the film back into a clear sheet.

“What we have shown is that you don’t need lasers - everybody else was doing this with lasers, and we showed you can do it with incoherent light from a lamp or the Sun - natural light,” Prof Silberberg told BBC News.

But the team then realised that the same approach can work in reflection - that is, not passing through a scattering material but bouncing off of it, such as the case of light bouncing off a wall at a corner.

They then showed the procedure works just as well when the light from an object bounces off a piece of paper; the SLM could “learn” how to undo the paper’s scattering effect, making it a nearly perfect reflector.

As Prof Silberberg puts it: “You can take a piece of wall and effectively turn it into a mirror, and this is the part that makes everybody raise an eyebrow.”

However, he said that the primary use for the technique would be in biological and medical studies - especially tackling the highly scattering white brain matter in neurological imaging - rather than the business of seeing through thin materials or around corners.

Israeli researchers find that gray water is safe for household use

Health Ministry opposition nixes plan for household recycling systems. Researchers at Technion - Israel Institute of Technology in HaifResearchers at Technion - Israel Institute of Technology in Haifa.

Scientists from the Technion - Israel Institute of Technology and Ben-Gurion University of the Negev have proven the efficiency of gray water purification systems and that people should be encouraged to use such water.

The project is one of the most comprehensive ever undertaken anywhere in the world to study the re-use of gray water - water that is generated in homes in laundry, dishwashing and bathing and can be recycled to irrigate gardens.

The study found that in most cases the quality of the water stored after treatment was very high. Among the categories checked were clarity, quantity of solids and concentrations of bacteria, which dropped after the addition of disinfectants, chlorine tablets and ultra-violet light.

An average household system supplies between 100 and 120 liters of water a day for irrigating the garden.

The findings have been presented to the Health Ministry, which, however, refuses to change its stance against the use of gray water in private homes. The ministry wants to see additional research on the health implications of recycling such water.

Use of gray water purifications systems are on the rise in Israel are are believed to be in use in 10,000 households. However, they are not

approved by the Health Ministry, which is concerned about breakdowns in the system, and the ministry has issued no standards for use of such systems.

The new study, which was underway for nearly two years, was carried out by Prof. Amit Gross of Ben-Gurion's Zuckerberg Institute for Water Research, and Prof. Eran Friedler of the Faculty of Civil and Environmental Engineering at the Technion.

The study was funded by businessman Maccabi Carasso, who recently founded the Coalition for Gray Water Recycling in Israel, encompassing water experts and other scientists.

The study followed up 20 homes in various parts of Israel that used a gray water irrigation system developed in the Zuckerberg Institute. The system consists of two plastic tanks, one for purifying the water and the other for storing it. In case of a breakdown, the water flows to the central sewerage line instead of to the garden. last week. The Health Ministry said the research and the method have not proven that there is no risk in gray water irrigation, and that is why the ministry does not authorize such systems for private homes.

Yossi Vardi, godfather of Israel's hi-tech industry

"The secret sauce of Israel's success is the Jewish mother."

Yossi Vardi, the godfather of Israel's hi-tech industry, cracks yet another joke, sitting comfortably in his spacious house in Tel Aviv.

In the past few decades he has invested in and helped build some 80 Israeli start-ups - ranging from software firms to mobile phone and clean technology companies to name a few. Many of them he sold to international tech giants.

One of his possibly most famous investments was the first popular internet instant messaging service ICQ, bought by AOL in 1998 (who turned it into AOL Messenger).

He played a part in the creation of Answers.com, invested in software solutions firm Gteko (bought by Microsoft in 2006) and the Gifts Project (acquired by eBay), in Airlink, Scopus, BrightCove and many others.