ISRAEL HIGH-TECH
& INVESTMENT REPORT

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Nearly 100,000 Clicks in May

Israel's BriefCam sophisticated video analysis system helped ID the Boston Marathon terrorists

An Israeli hi-tech company with an office in metropolitan Boston was instrumental in helping to identify and lead to the arrest of the Boston Marathon terrorists

BriefCam company's technology enabled investigators to summarize an hour of surveillance video footage into only one minute and also zoom in on people and objects whose movements changed during the filming. The system then can track those movements form the beginning of the video.

„The technology used by U.S. security forces has already been installed around the world in police, HLS, intelligence entities and others, saving time and manpower and also providing a solution for the vast challenge of growing the amounts of recorded video produced every hour, every day, Israel Defense reported .

The system is based on the concept of allowing the simultaneous display of several events. Once a certain movement or area is indentified, the system then tracks it during the entire film.

Amit Gavish, general manager for the Americas at BriefCam. based in Farmington, Massachusetts, told the GCN technology website, explained how it works. "If you have 10 hours to investigate on a specific camera, the software will take it to a 10-minute clip events that occurred during those 10 hours will be presented simultaneously.

Gavish, who is the former deputy head of security for the office of the Israeli President, said each event is "tagged" and marked with a time

BriefCam
Foreign investment in Israeli start-ups seen rising
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Avago buys Israel's CyOptics for $400m.
Harman buys Israeli road safety app developer iOnRoad
Diabetes app co LabStyle Innovations begins trading on Wall Street
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stamp on screen, so the viewer is watching events that happened hours apart, at the same instant.

„We are the search engine for video, he added.

GCN reported that BriefCam and other sophisticated video systems have caught the eye of mass transit and port systems

“Most of these large cities have already been going down the path to do exactly what everybody’s wondering if they’re going to do. They’re not just putting in thousands of cameras, they’re putting in tens of thousands of cameras.” said David Gerulski, vice president of Texas-based BRS Labs, which installs artificial intelligence systems for video surveillance.

He said that the old-fashioned surveillance camera does not play a major part in helping to uncover terrorism or thwart crime and many cities simply „shut them off.”

BriefCam’s product is in use in the United States, Israel, China, Taiwan and other countries and came into useafter the massacre in Oslo in 2011, in which 87 people, including children, were murdered.

In the case of the Boston Marathon bombings, U.S. Park police technological service direct David Mulholland explained, “There may have been 500 people who walked in that general area, but the analytics piece will ignore that and flag anything that changed in that one specific area, such as a backpack being left behind. So instead of spending 20 minutes looking at video in which nothing happens, the investigator can hit a button and in 30 seconds go to the area of interest and then begin to dissect what actually happened”.

Foreign investment in Israeli start-ups seen rising

57% of Israeli venture capital executives expect foreign investment in Israeli start-ups to increase over the coming year, and 43% expect that the number of high-tech exits will grow, according to Deloitte Brightman Almagor Zohar’s VC Indicator for the first quarter of 2013. This is the firm’s 43rd quarterly survey of Israeli venture capital managers and partners.

Deloitte Israel Technology, Media & Telecommunications manager Tal Chen said, “The global giants understand that their survival in a dynamic market depends on their ability to constantly offer innovative products. They are therefore investing heavily in locating innovative technologies for both acquisition and investment.”

Tal adds, “We have recently seen these investments channeled toward Israeli start-ups more intensively than ever

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Israeli venture capitalists also believe that the sectors which will see the largest number of exits in the coming year are the Internet, software, IT, and security. They expect cleantech to have the lowest number of exits.

The VC Indicator survey also found an interesting trend in new sources of support and financing for start-ups. Lately, there has been a sharp increase in the number of accelerator programs for Israeli start-ups. The survey found that 68% of venture capitalists believe that these programs will have a positive effect on high tech.

The Office of the Chief Scientist has also announced a new program for financing start-ups, which the VC Indicator expects will affect venture capital funds. Israeli venture capital firms are raising less money than in the past, and the high-tech sector is seeking alternative ways to finance start-ups. Among other things, this need has resulted in the growth of accelerator programs and the Chief Scientist's new financing plan, the effect of which is being studied/

The VC Indicator also pointed to a new trend in the communications sector: the growth of consumer applications. According to the survey, 42% of venture capitalists expect the number of companies in the sector to grow, compared with 19% of respondents who expect the number to fall.

OPKO Health acquires Prolor Biotech for $480 million

The Shanghai Fosun Pharma group says it is purchasing Israeli medical and cosmetic laser equipment maker Alma Lasers, for $240 million.

This is the second major transaction involving an Israeli company within a few days, following the sale of Prolor Biotech to Nasdaq-listed OPKO Health for $480 million (which remains contingent on certain closing terms).

Alma Lasers, which was formed by a merger between MSQ, an Israeli company headed by Ziv Karni, and U.S.-based Orion Lasers, operates out of the Caesarea industrial park. It develops, makes and sells laser devices, light-based, radiofrequency and ultrasound devices for cosmetic and medical applications to treat conditions including acne, psoriasis, fungal infections of the nails and varicose veins.

Since 2006 the merged company has been under the control of international private equity firm TA Associates, which has invested $90 million in Alma Lasers at a company value of $140 million.

TA Associates currently holds a 73% interest in the company while Karni owns 16.5%.

Fosun Pharma was registered several months ago on the Hong Kong Stock Exchange, where it currently trades at a market value of $4.2 billion.

The deal will be closed during the second half of 2013.

"We believe this transaction recognizes the value we have created at Prolor," said Prolor president Shai Novik.

FDI up at $1.04B in February

Foreign direct investment jumps from $448 million in January mainly due to $630 million investment by US company in Israeli software services firm

Israel received $1.04 billion worth of foreign direct investment through local banks in February, up from $448 million in January and $337 million in December, the Bank of Israel says.

Calcalist Exclusive
Bank of Israel to invest in Europe Monetary Committee decides to increase investments in foreign markets from 3% to 6% of forex reserves, expand investments in mortgage-backed bonds guaranteed by US government
Full story

Foreign direct investment in February mainly jumped due to a $630 million investment by a US company in an Israeli software services firm. In February, NCR completed its acquisition of Israeli retail software company Retalix.

Foreigners invested a net $220 million in shares on the Tel Aviv Stock Exchange in February, following net investment of $340 million in January.

In February, foreigners invested around $300 million net in unlinked government bonds and sold around $50 million in short-term bills called makams.

Preliminary figures for March indicate sales of about $90 million in makams, sales of $360 million in government bonds and sales of $60 million in Tel Aviv-traded shares.

Israeli Firm Grows Bones from Fat
Bonus Biogroup based in the northern Israeli city of Haifa, will help millions of people all over the world suffering from bone diseases such as osteoporosis, bone infection and also accidents that cause irreparable damage to the bones, reported Xinhua.

By making the cells grow in a scaffold after scanning the patient's bones to determine the shape, these cells then fill a mould and make a completely new bone resembling the lost one.

"By using live adult cells inside the scaffold and mimicking the body's conditions, the cells fill the cast in a matter of a few months, two or three, so the patient is ready to receive an implant that his body will not reject, because it was taken from his own body," Bonus Biogroup founder and CEO Shai Meretzki told a press conference Thursday.

The cell extraction procedure is very non-intrusive, unlike bone replacement surgeries today that take a piece of the patients' bone and work on it to make it look as similar as possible to the bone it will have to replace. This, of course, is a painful and long process that requires months of post-operative care.

"We do a small liposuction on the patient's stomach and make those cells turn into the new bone by telling each of them how to grow. Many patients encourage us to continue with the liposuction!" Meretzki laughed.

For now, Meretzki and his team only researched on rats, but the trials on human will begin soon, as they expect that their technology will be available for everyone in no more than three years. The new innovation in tissue growth, which took Meretzki and his team five years to develop, can also be applied in dentistry since many times dental implants cannot take root due to lack of bone structure.

"With this technology, dentists can grow bone tissue in the mouth so that the dental pieces can be easily put in place," Meretzki said, though admitting that for now, growing organs in a similar way is still far down the line.

"Bone tissue is relatively easy to grow, because its cells are not as complex as the ones on body organs, but I don't think it's something impossible, we just need to research more," he added. (IANS)

Scientists develop first photonic topological insulators to Provide Protection for Transport of Light

Researchers at the Technion-Israel Institute of Technology have developed and successfully demonstrated a photonic topological insulator, a new device used to protect the transport of light through a unique, lattice of 'waveguides' The advancement may play a key role in the photonics industry.

The photonics industry is at the heart of modern computing and communication. It has allowed vast amounts of data to be transmitted extremely quickly over fiber optic lines that cross the oceans. Photonic technology (i.e., technology that is based on the flow and control of light) is at the heart of DVDs, fabrication of computer chips, and solar cells.

As computers get faster and computer chips get denser, there is a need for smaller and smaller devices that manipulate light. But when devices get smaller, imperfections in the fabrication processes can play a large role, making light move irregularly and unpredictably. In other words, there's a need for a new methodology to prevent unwanted scattering from any kind of defect.

Researchers at group of Prof. Mordechai (Moti) Segev at the Technion, in collaboration with the group of Prof. Alex Szameit at the Friedrich-Schiller University in Jena, Germany, have done exactly that. Using a lattice-work of 'waveguides' (which are like wires that guide light instead of electricity), the researchers have experimentally demonstrated a 'photonic topological insulator.' The researchers used an array of helical 'waveguides' (shaped like curly hairs) arranged in a 'honeycomb' lattice structure, similar to the pattern observed in beehives. In such a structure, where each waveguide is thinner than a tenth of a human hair, light is 'topologically protected,' which means it flows uninterrupted despite the presence of defects.

According to Segev, "topological protection means that light simply flows around imperfections essentially without noticing them."

Topological protection was first conceived not for light, but for electrons flowing in a solid material. However, Dr. Mikael Rechtsman and Mr. Yonatan Plotnik from the Technion, figured out how to bring topological protection into photonics, using an array of waveguides that interact with one another. The additional step needed to achieve topological protection was to make the waveguides helical (in the shape of a helix), rather than straight. "The helical nature of the waveguides breaks the symmetry, so that in the forward direction the waveguides are spinning clockwise, and in the backward direction, counterclockwise" said Rechtsman. "In our procedure, this is an essential ingredient in preventing unwanted scattering."

"Photonic topological insulators have the potential to provide an entirely new platform for probing and understanding topological protection," explained Rechtsman. "For example, all sorts of experiments that would be difficult or impossible to carry out in solid-state materials can now be accessed using light."

"Such new ideas might one day be an important part of the optical communication industry, being robust to scattering and disturbances: a super conductor of light," added Plotnik.

"This discovery is another step in the progress towards optical and quantum computing," said Julia Zeuner, a graduate student at Friedrich-Schiller University in Jena, who fabricated the sophisticated photonic structure and did part of the experiments. Her contributions, and those of her PhD advisor (Szameit), were absolutely crucial, and manifested a long standing Israeli-German collaboration between the teams. "We have discovered a completely novel phenomena," concluded Segev, "and new phenomenon are destined to find applications in directions

that we can't even imagine."

Global agencies assess Israel

During 2012, the three leading global credit rating companies, and the International Monetary Fund (IMF) commended Israel's economic performance and expressed confidence in its long-term viability. On September 30, 2012, Standard and Poor's (S&P) reaffirmed Israel's A+ credit rating, at a time when it lowered the credit rating of an increasing number of Western countries. According to S&P, "the Israeli economy continues to generate solid economic growth…. Major security risks will be contained…. There is sufficient political will to prevent a sizable increase in the government's debt burden…. We forecast that by the middle of the decade domestic natural gas production should contribute to improved external and fiscal balances."

On September 3, 2012, Moody's sustained Israel's A1 credit rating, stating that "Israel's stable outlook is underpinned by the country's high economic, institutional and government financial strength…supported by its relatively high GDP per capita [US$32, 000] and its economic resilience…. The country's specialized-export sector is well-positioned to rebound quickly should the global environment normalize…. Moody's judges Israel's susceptibility to event risk as moderate based on the political risks facing the country, both domestic and external…. Israel's own gas production will increase substantially between 2013 and 2016." On April 23, 2012, Fitch Ratings maintained Israel's long-term foreign exchange and local currency credit rating at A and A+ respectively, despite the ongoing war on Palestinian terrorism, the Iranian nuclear threat and the raging Arab Street. Fitch cited "Israel's strong institutions and solid recent macroeconomic performance, rich, diversified economy and strong external balance sheet against a high level of government debt and longstanding geopolitical concerns."

On April 2, 2012, the International Monetary Fund (IMF) published its annual report on Israel's economy: "Israel's economy remains strong… led by robust private consumption and buoyant investment…. Israel's fundamentals are strong: inflation and inflation expectations are squarely within the 1-3 percent target range; unemployment is at historic lows; the net international investment position is a surplus; and public debt has fallen steadily to below 75 percent of GDP…. The Israeli financial system currently appears to be generally robust…. The current combination of external threats and the relative stability of the domestic system are propitious for strengthening the crisis management framework…." The IMF report adds that the recent discoveries of natural gas fields may transform Israel to a net energy exporter in coming years.

Israel's economic indicators

While most of the world is afflicted by an economic meltdown, Israel demonstrates fiscal responsibility, sustained economic growth and a conservative, well-regulated banking system with no banking or real estate bubble. For example, from a 450% galloping inflation in 1984, Israel managed to hold inflation in check – 1.6% in 2012. Israel's budget deficit and unemployment were 4.2% and 6.9% respectively in 2012, significantly lower than the OECD average of 7% and 8%. During the 2009-2012 global economic crisis – without a stimulus package and in spite of the stoppage of the natural gas supply from Egypt, which increased energy cost – Israel experienced a 14.7% growth of gross domestic product (GDP), the highest among OECD countries. Israel led Australia (10.7%), Canada (4.8%), USA (3.2%), Germany (2.7%), France (0.3%) and the Euro Bloc which suffered a 1.5% decline in GDP. Israel's 2012 GDP growth (3.3%) leads the OECD which averaged 1.4%, higher than the US (2.2%) and Canada (2%), but lower than India (4.5%) and China (7.5%).

Israel's GDP of $250BN in 2012 catapulted 120 times since 1948. From $1,132 and $19,836 GDP per capita in 1962 and 2000 respectively, Israel surged to $32,000 GDP per capita in 2012. While the debt/GDP ratio – a key indicator for the rating companies – is the Achilles' heel of most countries, Israel has managed to reduce it rapidly. From about 100% in 2002, it was compressed to 75% in 2012, compared with the OECD average of 78%.

The Bank of Israel foreign exchange reserves – which are critical to sustain global confidence in Israel's economy and Israel's capabilities during emergencies – soared from $25BN in 2004 to $75BN in 2012, 26th in the world and one of the top per capita countries. The Swiss-based Institute for Management Development (IMD) ranks the Bank of Israel (Israel's "Federal Reserve") among the top five central banks in its 2012 World Competitiveness Yearbook for the third year in a row. Recognizing Israel's promising economic indicators, Kasper Villiger, Chairman of the United Bank of Switzerland (UBS) indicated that China, Hong Kong, Brazil, Russia and Israel are the future growth engines for UBS. Deloitte Touche, one of the top four global CPA firms opined that Israel is the fourth most attractive site for overseas investors, trailing the USA, Brazil and China, but ahead of India, Canada, Singapore, Taiwan, Australia, England, Germany and Japan.

Israel – the high-tech country

According to Warren Buffet, one of the most successful and conservative investors in the world: "If you're going to the Middle East to look for oil, you can skip Israel. However, if you're looking for brains, look no further. [Israel] has a disproportionate amount of brains and energy." In 2006, Berkshire Hathaway, Buffett's investment company, made its first ever acquisition outside the US, in Israel, purchasing 80% of the Israeli company Iscar for $4 billion. In his annual letter to Berkshire Hathaway's stockholders, Buffett defined the Iscar investment as "the highlight of the year," adding that "at Iscar, as throughout Israel, brains and energy are ubiquitous (New York Sun, March 2)."

Eric Schmidt, Google's Executive Chairman, has been a frequent investor in Israel's high-tech via his own private venture capital fund, Innovation Endeavors. He considers Israel "the most important high-tech center in the world after the US," which will have an oversized impact on the evolution of the next stage of technology. In fact, Google established a large engineering and sales operation in Israel, whose achievements are definitely world-class. Intel has led the pack of some 400 global high tech giants which operate in Israel. Intel features, in Israel, four research and development centers, two manufacturing plants and investments in 64 Israeli start ups. Intel's President and CEO, Paul Otellini, revealed that "we are the largest private employer in Israel (8,200 employees), and most of those employees have technological know-how. Some of our most sophisticated engineering efforts are carried out in Israel…. We have been in Israel for 40 years and we have done many things. We're here for the long term. A Wall Street Journal book review of The Start Up Nation reported that "Steve Ballmer [Microsoft's CEO] calls Microsoft as much an Israeli company as an American company, because of the importance of its Israeli technologies. Google, Cisco, Intel, Microsoft, eBay…live and die by the work of [their] Israeli teams…. Israel, a tiny nation of immigrants torn by war, has managed to become the first technology nation…."

Highlighting Israel's emergence as a high-tech superpower and a unique ally of the US, George Gilder, the author of The Israel Test and a high-tech guru, wrote in The Wall Street Journal: "Israel cruised through the recent global slump with no deficit or stimulus package… It is the global master of microchip design, network

algorithms and medical instruments…water recycling and desalinization…missile defense, robotic warfare, and UAVs…[supplying] Intel with many of its microprocessors (Pentium, Sandbridge, Atom, Centrino)… Cisco with new core router designs and real-time programmable network processors… [supplying]Apple with miniaturized memory systems for its iPhones, iPods and iPads, and Microsoft with user interface designs for the OS7 product line and the Kinect gaming motion-sensor interface….U.S. defense and prosperity increasingly depend on the ever-growing economic and technological power of Israel. If we stand together we can deter or defeat any foe…. We need Israel as much as it needs us."

The high-tech giants don't just talk the Israel-talk; they walk the Israeli-walk. For instance, Cisco just made its 11th Israeli acquisition, acquiring IntuCell for $475MN; IBM acquired WorkLight for $60MN, its 11th Israeli acquisition; Sequoia Capital, one of the world leading venture capital funds, introduced its 5th Israeli-dedicated $200MN fund; Hong Kong's $22.5BN Sir Li Ka-Shing, the 9th wealthiest person in the world, made his 7th Israeli investment; ChemChina acquired 60% of Agan for $1.44BN; Siemens acquired solar energy Solel ($418MN) and 40% of Arava Power ($15MN); Apple made its 1st Israeli acquisition – its first research and development center outside the USA – acquiring Anobit for $400MN; the Dallas-based DG acquired MediaMind $517MN; etc..

Israel's competitive edge

Israel attracts the elite of global high-tech due to its competitive edge, offering a unique high-tech environment. For instance, the Shanghai Jiaotong University's Academic Ranking of World Universities – one of 3 most influential rankings – includes four Israeli universities among the top thirty computer science universities in the world. Twenty universities are from the US, four from Israel, two each from Canada and the UK and one each from Switzerland and Hong Kong.

Israel leads the world in its research and development manpower per capita: 140 Israelis (per 10,000) and 85 Americans (per 10,000) are ahead of the rest of the world. Israel's qualitative workforce benefits from the annual Aliya (immigration of Jews) of skilled persons from the former USSR, Europe, the USA, Latin America and Australia, who join Israeli graduates from Israeli institutions of higher learning. In addition, Israel's high-tech absorbs veterans of the elite high-tech units of Israel Defense Forces. Israel's defiance of unique security and economic challenges has produced unique, innovative and cutting edge solutions, technologies and production lines. Israel's informal society has also nurtured ongoing interaction between the academic, research, military and industrial sectors. Moreover, Israel's robust demography – which leads the Free World with three births per Jewish woman – provides a tailwind for Israel's economy.

In order to sustain its competitive high-tech edge, Israel dedicates 4.5% of its GDP to research and development, the highest proportion in the world, ahead of the OECD (2.3%), Sweden (3.8%), Finland (3.5%), South Korea (3.4%), Japan (3.3%), the US (2.8%), Germany (2.7%) and Canada (1.7%). In advance of Israel's 64th anniversary, Nicky Blackburn, editor and Israel Director of "Israel 21st Century", wrote: "With the most startups per capita worldwide, and the third highest number of patents per head, Israel has become one of the leading players in the world of high-tech innovation, attracting international giants to its shores. From health breakthroughs to technology, agriculture, the environment and the arts, the country's inno-

vations are transforming and enriching lives everywhere. Israel today is playing a significant role in some of the most important challenges facing our planet."

In hindsight, the ongoing wars and terrorism, since Israel's establishment in 1948, have been just bumps on the way to unprecedented economic and technological growth. Wall Street is much more pertinent than the Gaza Strip!

Hanover Completes Acquisition of Israeli Technology Incubator

LOS ANGELES, CA, Apr 09, 2013 (Marketwired via COMTEX) -- Hanover Portfolio Acquisitions (otcqb:HVPA), an intellectual property investment and monetization firm, announced today it has completed the acquisition of Israeli technology incubator, The Aviva Companies Corporation ("Aviva"). Aviva is a Texas-based incubator focused on the transfer and commercialization of intellectual property developed primarily in Israel.

"Aviva has identified leading and disruptive technologies that have been sourced and developed from some of the brightest minds in the State of Israel," stated Hanover Chairman and CEO Alan Collier. "Combining our resources with Aviva's relationships presents an exciting opportunity to rapidly commercialize Israeli-developed technologies through our licensing, joint venture and direct investment platform."

Aviva has dedicated the past several years to developing and cultivating its relationships within the Information Technology (IT) sector in the State of Israel, primarily working within the technology departments of the top Israeli Universities and high ranking Israeli academics.

"We are cognizant of the fact that the partnership created by the Aviva and Hanover teams is uniquely equipped and positioned to transform verticals across the globe," stated Josef Garcia, President and CEO of Aviva. "We have been very fortunate in teaming up with Hanover and look forward to announcing our innovative technologies that will foment sustained growth and create value for Hanover's shareholders."

Jacob Cohen, Aviva's CFO, added, "We were immediately impressed with the amount of human capital surrounding and involved in Hanover and are very excited about the synergistic opportunity to work together to bring these technologies to the market -- both in the United States and abroad."

About Hanover Portfolio Acquisitions Hanover Portfolio Acquisitions is an intellectual property investment and monetization company focused on creating shareholder value through joint ventures, licensing and direct investments in innovative technologies. The Company specializes in healthcare, energy, consumer electronics, and internet/mobile related technologies.

KKR acquires Alliance Tires for $500m

KKR LLC (NYSE: KKR) will acquire the 75% controlling interest in Alliance Tire Group Ltd. from Warburg Pincus LLC. According to "Reuters", KKR will pay $500 million for Alliance Tire, generating a profit of hundreds of millions of dollars for Warburg Pincus.

Warburg Pincus's Indian partner in Alliance Tire, Yogesh Mahansaria, will keep a stake in the company and will work with KKR. KKR may ultimately own 90% of Alliance Tire, and will partly finance the acquisition with debt, which will be backed by collateral. The closing will be in July, subject to various conditions.

Alliance Tire has bonds listed on the Tel Aviv Stock Exchange (TASE). The bond debt totals NIS 135 million.

Warburg Pincus acquired control of Alliance Tire from Eliezer Fishman's Fishman Holdings at a company value of $50 million in 2007. The investment bank later invested tens of millions of dollars in the company, including to delist it from the TASE.

Alliance Tire has over 2,500 employees at its manufacturing plants in Israel and India, and R&D facilities in Israel, India, the US, and South Africa. The company sells its off-highway tires for the agricultural, forestry and construction industries under the Alliance, Galaxy, and Primex brands in 120 countries. Revenue totaled $421 million in 2012, 5% more than in 2011, and its profit rose 38% to $22 million, thanks to lower taxes and financing costs.

At a massive scientific parley recently held in Tel-Avi, 18 Israeli companies and several more from around the world will meet to discuss translational research on stem cells, cell therapy, and regenerative medicine in both industry and academia.

The use of human cells for treating disease has expanded dramatically over the past decade, leading to the development of a new field: cell therapy — or, in professional terms, regenerative medicine — in which new cells are introduced into body tissue to treat disease. Over the past few years, the knowledge accumulated in the field has begun to leave the laboratories of academia for the commercial world, the development of innovative treatments in hospitals and even the production of off-the-shelf products. In Israel, 18 companies — an unprecedentedly large proportion in relation to the country's population — develop or market cell-based treatment products. Three of them develop therapies from stem cells produced from fetal cells. All of these will be on hand at the Israstem Conference next week (April 22 and 23) at the Kfar Maccabiah Convention and Event Center in Ramat Gan.

So far, health services in Western countries have approved five off-the-shelf products based on cells from various sources. Additional products are in the pipeline. One product developed in Israel by Pluristem Therapeutics uses mesenchymal stem cells produced from human placenta to treat peripheral blood disease, prevent limb amputations and improve patient life expectancy. (Mesenchymal stem cells have the ability to differentiate into a variety of cells including bone, cartilage and fat cells.)

Some cell-therapy products are not off-the-shelf. Rather, they are treatments that allow the use of the patient's own cells after they have undergone a process of activation outside the body. For example, Dendreon, an American biotechnology company that focuses on cancer, is developing a vaccine against prostate cancer that uses the patient's own blood cells, mixed with the company's proprietary technology.

Dr. Shosh Merhav, the former head of the Cell Therapy Projects Unit at Teva Innovative Ventures and now a private consultant in the stem-cell industry, is co-chair of the Israstem Conference.

"The model on which such products are based is different from off-the-shelf products," she says. "Of course, at the business level, off-the-shelf products have an advantage because the cells that have been produced can be preserved for longer and used for any patient, not just for the patient from whom they were harvested."

A product based on treating activated cells that has already been approved in Israel and added to the list of treatments provided by the Health Ministry was developed by the Israeli company MacroCure, which uses cells from the blood donations of healthy people. White blood cells from the donated blood that undergo activation

via a specific technology are used to treat particularly stubborn wounds. “These cells stimulate a response from the patient’s own cells, including skin cells and white blood cells, to encourage wound healing,” says Dr. Avi Treves, chairman of the Israstem Conference and the deputy director of the Sheba Cancer Research Center at the Sheba Medical Center.

Of the 18 Israeli companies in the field, nine develop or produce products that come from donors other than the patients, eight develop treatments from the cells of the patients themselves, and one company is in the first stages of safety trials for a new product made from the cartilage cells of miniature pigs.

Gamida Cell, a cell therapy company, is awaiting approval from the United States Food and Drug Administration for a treatment that uses umbilical-cord-derived stem cells expanded with the company’s proprietary technology to treat adult leukemia patients. “Umbilical blood contains adult stem cells that come from fetuses. These cells, which have expanded treatment and healing capabilities, are already used routinely to treat patients with leukemia as an alternative to bone-marrow transplants,” Treves says. “The new product allows the multiplication of these cells, producing a larger dose that can increase the chances of success.”

Several products that use ordinary human cells are in the clinical-trials stage. A product made by the Israeli company BrainStorm Cell Therapeutics, which uses cells from patients with neurodegenerative diseases such as Amyotrophic Lateral Sclerosis (ALS, also known as Lou Gehrig’s Disease), is being tested at Hadassah University Hospital, Ein Kerem. A technology for treating autism with the patient’s own umbilical-cord blood is being developed in the United States, as is another treatment of cerebral palsy that uses the patient’s own umbilical-cord blood.

At Sheba Medical Center, stem-cell-based therapies are being developed to treat hard-to-heal wounds and retinitis pigmentosa, an eye disease that attacks the retina and can lead to blindness. A presentation will also be given at the conference on the positive results of an ongoing study at the Ella Institute for Treatment and Research of Melanoma and Skin Cancer at the Sheba Medical Center. The treatment being studied is based on the activation of immune cells outside the body and their introduction into melanoma patients together with new anti-cancer treatments. The findings, from more than 50 patients, show a high rate of efficacy.

Additional findings that will be presented at the conference include those of a study by Zelig Eshhar of the Weizmann Institute of Science, which is still in the academic stage. Eshhar is developing an advanced technology that uses genetically-engineered T cells, called chimeric antigen receptor (CAR) cells, to teach a person’s immune system to destroy a specific cancer. The technology uses the patient’s own white blood cells, which are activated by the injection of a specific gene, giving them the ability to identify, attack and kill the cancer cells. Human trials based on the technology are testing the efficacy of this therapy against several types of leukemia and glioblastoma, the most common and aggressive brain tumor in humans.

Another branch of the stem-cell therapy field that is still in early development is testing the advantages of treatments developed from fetal stem cells — cells harvested from fetuses that were aborted or extra fetuses created in fertility treatments and later donated by the couples undergoing the treatment. In the past, this method caused an ethical controversy in the U.S., and for several years during the Bush administration, government funding for these studies was stopped. It was later restored. Israel is a world center for fetal-cell research,

and three companies here develop stem-cell products from this source.

One goal of the Israstem conference is to stimulate government investment in Israel's stem-cell therapy industry. "Many countries invest a great deal in the industry," says Merchav.

Governmental investment in stem-cell therapy is minimal in Israel. In 2003, Israeli companies, together with the chief scientist of the Industry, Trade and Labor Ministry, established the Bereshit Consortium for Cell Therapy (Bereshit is the Hebrew word for "genesis") to allow cell therapy companies in Israel to provide stem-cell technologies and products to researchers around the world. The consortium supported the development being done at Hadassah University Hospital, Ein Kerem, to create lines of fetal stem cells that can assist in treating blindness caused by age-related macular degeneration (AMD). It closed in 2009 after six years of operation.

According to Merchav, "Without investment in the field, we will lose our advantage over countries such as the United States, Japan, South Korea, the United Kingdom and Australia, which lead in investments."

Stem-cell therapy also raises concerns regarding side effects. The side effect feared most is that the transplanted cells, which are "young" cells and have a tendency to grow quickly, could grow uncontrollably in the patient's body, causing malignant tumors.

Avago buys Israel's CyOptics for $400m.
Jerusalem Venture Partners (JVP) announced yesterday that it had signed an agreement to sell CyOptics Inc. to Avago Technologies Ltd. (Nasdaq: AVGO), a developer of of analog interface components for communications, industrial and consumer applications, for $400 million in cash. CyOptics was founded in 1999 by Dr. Uzi Koren and JVP and its founder MK Erel Margalit (Labor) as a spin-off from SCD, a subsidiary of Elbit Systems Ltd. (Nasdaq: ESLT; TASE: ESLT) and Rafael Advanced Defense Systems Ltd.

JVP was founded by MK Erel Margalit (Labor). Its track record includes the sale of Chromatis Networks for $4.82 billion in 2000, the highest amount ever paid for an Israeli company.

CyOptics is developing next-generation optical components for high-speed transmission of video content. Customers include governments and some of the world's biggest companies. The company is growing rapidly, tripling its sales in the past three years to $210 million in 2012.

JVP, run by general partners Gadi Tirosh and Kobi Rozengarten, has been the largest investor in CyOptics since it was founded, and currently owns more than 50%. In January 2011, JVP, which specializes in building big companies by acquiring large stakes in them, led a $50 million internal round in CyOptics, buying most of the stakes of other investors, and boosting its own stake from 11% to over 50%. In March 2012, JVP brought in a Boston private equity fund as shareholder in the company.

JVP's investment strategy in CyOptics over the past decade included major steps, such as expansion of the company through mergers and acquisitions; the establishment of the first designated fund of its kind in Israel to invest in late-stage companies, including in CyOptics; and the decision to bring in the Boston private equity fund as a strategic partner.

"I would also like to take this opportunity to thank our long standing investors, JVP and especially their founder, Dr. Erel Margalit, for their support and guidance over the past decade in building

CyOptics into the significant industry participant it is today," said CyOptics president and CEO Ed Coringrato.

Harman buys Israeli road safety app developer iOnRoad

Road safety app developer iOnRoad Technologies Ltd. has been acquired by global audio and infotainment company Harman International Industries Inc. (NYSE: HAR). The companies did not disclose the size of the deal, but it was reportedly for a few million dollars.

Although the exit is not large, iOnRoad's investors will see a respectable return on investment, as the company has raised $1 million from Keydan Capital Ltd. and private investors. "Everyone is pleased by the deal - the investors, employees, and we, the founders," iOnRoad co-founder and CEO Alon Atsmon told "Globes".

iOnRoad was founded in 2011 by Atsmon and CTO Dan Atsmon as a subsidiary of PicItUp Corporation The company has developed an app which uses the forward camera of a driver's smartphone and augmented reality technology to spot vehicles that are too close to the car, and warn the driver of the danger. The app can also identify the road's edges and shoulders to prevent the driver from leaving the road.

Israeli Researchers Discover Gene Responsible for Liver Disease

After years of hunting, Dr. Rifaat Safadi and his team of Hadassah medical researchers in Jerusalem have found the gene that causes liver disease. This groundbreaking discovery paves the way for potential new treatments.

Safadi, an Arab-Israeli physician who heads the Liver Unit at Hadassah University Hospital in Ein-Karem, tells ISRAEL21c that while the gene, Neuroligin 4 (NLGN4), was already known to be involved in brain neuron communication, his team was the first in the world to identify NLGN4 in the immune system and liver.

"The gene is there and now the question is how much of it is being expressed, since an over-expression of this gene is affecting immune system modulation, or the immune control of fibrosis in the liver," he explains.

In the study, Safadi and his team took blood samples from hospital patients to look at their NK cells. One group had cirrhosis of the liver, while the other was a control group for comparison purposes.

Hadassah's Hadasit Technology Transfer Company has patented Neuroligin 4 and Safadi plans on working toward creating a drug based on the new knowledge, which was reported at an American Association for the Study of Liver Diseases in Boston late last year.

Diabetes app co LabStyle Innovations begins trading on Wall Street

Diabetes app developer LabStyle Innovations Corporation has begun trading on Wall Street's Bulletin Board under the ticker "DRIO". The company developed the Dario self-monitoring of blood glucose app for diabetics, which is scheduled for launch later this year.

LabStyle chairman and CEO Dr. Oren Fuerst founded the company in 2011. In a notice to shareholders, he says that the Dario is an all-in-one device the size of a pack of gum, which includes a jack for a smartphone. The device includes a lancet to obtain a blood sample, a cartridge to store proprietary disposable test strips, and a glucose reader adaptor to hold the strip and interface with a smartphone, coupled with a smartphone app and internet-based (cloud) data services.

LabStyle applied for EU CE Mark certification for the Dario in late 2012, and expects approval

later this year. The company will then launch the device in Germany and the UK via distributors, followed by launches in Belgium and Scandinavia. Later, pending regulatory approval, the company plans sales in the US India, Brazil, and Japan.

The Dario iPhone app has been approved by Apple Inc. (Nasdaq: AAPL) and will be available for download from the European app store as soon as the CE Mark is obtained. An Android app is planned for later in 2013.

Diabetes co Integrity Applications lists on Wall Street

The Ashkelon-based company has developed a non-invasive blood glucose measuring device for type 1 and 2 diabetes.

Integrity Applications Inc. has listed on Wall Street's Bulletin Board under the ticker "IGAP", after raising $6.3 million in its IPO of shares and warrants in March. The company has developed a non-invasive blood glucose measurement device for type 1 and 2 diabetes, the GlucoTrack DF-F.

Integrity Applications CEO Avner Gal said, "The commencement of trading in our common stock marks an important milestone for Integrity Applications, and we are pleased that our company has progressed to this stage. If approved for sale, our GlucoTrack DF-F product candidate will allow diabetics to painlessly measure their blood glucose levels without taking blood or utilizing test strips. We know that taking frequent blood glucose measurements improves patient care by facilitating glycemic control, and we believe that non-invasive testing will encourage more frequent measurements by diabetics."

Avner added that the company applied for EU CE Mark certification of its product earlier this year, and expects to obtain approval by June. Later this year, the company will prepare its regulatory strategy for developing the device in the US.

The GlucoTrack DF-F device uses a patented combination of ultrasound, electromagnetic, and thermal technologies to obtain blood glucose measurements in less than one minute via a small sensor that is clipped to the earlobe and connected to a smartphone-size, handheld control and display unit, all without drawing blood. Clinical data collected since 2009 at the Soroka University Medical Center in Beersheva indicate a positive correlation between GlucoTrack DF-F readings and those obtained from conventional invasive devices.

Integrity Applications was co-founded by Avner and VP operations David Malka, and is based in Ashkelon.