ISRAEL HIGH-TECH
& INVESTMENT REPORT

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The Perception of Israel Changes

In recent months we have noted what can only be termed as a return to sanity. The attitudes towards Israel have turned positive. Intel Corporation underscored this by announcing a $3.5b. investment in a new chip plant. Intel's history in Israel starts with the founding of an R&D center in Haifa in 1974, with just 5 employees. The Israel division of Intel is currently among the largest employers in the country and consists of five R&D centers in Haifa, Jerusalem, Kiryat Gat, Petach Tikva, and Yakum. Its staff is over 6000 employees. The top-priority line of Intel activity in Israel is R&D — Israeli division of Intel has been acting as the R&D center for Intel divisions all over the world for over 30 years. Among the achievements of the research center in Haifa and its divisions in Yakum and Jerusalem are the first PC processor with an 8-bit 8088 bus, Intel MMX and Intel Centrino. The development center in Petach Tikva plays a leading role in Intel Mobility Group since the first processor (code named Manitoba) for mobile phones was designed in 2003. Intel has become Israel's number one exporter.

The Economist states that Israel's share of global foreign direct investment was 0.63% in 2005, amounting to $5.71 billion - 3.35 times the $1.7 billion in foreign direct investment in 2004. The surge in foreign direct investment in Israel in 2005, was due to large privatizations, especially Bank Leumi (TASE: LUMI) and Israel Discount Bank (TASE: DSCT).

There is little doubt that individual Israeli securities are often affected by developments in the United States. Towards the end of January, President George Bush in a speech stressed the need for eliminating America's dependence on foreign suppliers for oil. The proposed solutions given by the president's was to develop alternative methods of energy. The next day Ormat Technologies' (ORA:NYSE) shares appreciated by five and a half per cent. Ormat has been previously mentioned by us as one of our favorite companies. Ormat Technologies, whose share trade on the New York Stock Exchange, specializes in developing energy from geothermal sources.

We have noticed that in January 32 of 40 Israeli companies traded on the American markets advanced for a total gain of 8.5%. This was considerably above the benchmark index.

In 2005 Israel experience an all-time record of inflow of foreign investment which totalled nearly $10b.

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This flow of investments spells a newly accorded vote of confidence for this little country and in a change of overall perception that issues of defense alone, need not impact the view of Israel as a whole.
Moreover, ties between Israel and the United States are further strengthened by Israel being viewed as a first-rate supplier of defense material. The joint Arrow project in which several billions of dollars have been invested is ample proof of a special relationship. America uses Israeli drones as well as electronic equipment for its air force.
The BIRD Foundation provides matching funds for Israeli and American companies that enter into joint research and development projects.
The BARD Foundation provides similar support but for joint agricultural projects.

Another development that we have noted recently in our report, is the phenomenon of Governors of American States leading groups of industrialists in visits to Israel in an attempt to to woo Israelis to establish subsidiaries in the United States.
We have seen many of these interactions turn into market successes as the Israelis appreciate American expertise in marketing skills and public relations.
For Americans it is a matter of adding new jobs.
It is very reassuring for Israelis to hear the American president publicly state that America will stand and protect Israel in case of an attack by Iran. In the meantime American-Israeli cooperation helps Israel to grow and flourish and enforces that the perception of Israel has indeed changed.

YEDA establishes joint research fund with Johnson & Johnson

Yeda, the commercial arm of the Weizmann Institute of Science, announced that it has agreed with the Johnson & Johnson Corporate Office of Science & Technology to establish a joint fund to support scientific research at the Weizmann Institute of Rehovot. The fund's research grants, totaling hundreds of thousands of dollars, will support research in life sciences, medical aspects of nanotechnology and the development of medical devices.
By participating in the new fund, Johnson & Johnson will be exposed to emerging scientific research, and be able to follow new scientific trends as they develop, in real time.

"We welcome the cooperation with Johnson & Johnson, one of the most broadly-based manufacturers of health care products in the world," says Dr. Isaac Shariv, CEO of Yeda. "We believe this joint fund will lead to stronger ties between the company and Israel, to the mutual benefit of all sides."
Yeda's Chief Business Officer, Dr. Einat Zisman, said: "Since the announcement of the program, we have received a number of requests for support for exciting, original, multidisciplinary research projects. No doubt the existence of a joint fund with Johnson & Johnson will encourage the growth of novel directions in research at the Weizmann Institute and the development of new intellectual property."
"Johnson & Johnson is committed to funding research at leading universities worldwide, and we are very excited to establish a partnership with Yeda and the Weizmann Institute to support healthcare innovations," said Dr. Joni Catalano-Sherman, Corporate Director for Johnson & Johnson. "We are convinced that the research funded through collaborations with research institutions throughout the world will help lead to medical breakthroughs that could transform the lives of patients in the future."

Pitango and Star most active VC funds of 2005

Pitango and Star topped the list of most active funds with 11 First investments each. Pitango, which

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concluded raising $300 million for its fourth fund in 2004, increased its investment activity in 2005. Star, also made 11 First investments, although five were in foreign companies. JVP and Sequoia each had eight first investments. Five of JVP's investments were in companies operating in JVP Studio, JVP's managed incubator, while Sequoia made three investments from its new $200 million fund and five from its previous fund. Next ranked was Pontifax, a new VC player that focuses on Israeli life science firms.

Founded by Eli Hurvitz, Teva Pharmaceutical Chairman, Pontifax made seven first investments in 2005.
Giza, Vertex, Infinity,Carmel and Gemini followed with six First investments each and then Evergreen and Apax with five.

Cedar, Israel Seed, Ascend and Vitalife which ranked in the top 10 most active funds in 2004, are missing from 2005's top ranked firms.

The Top 10 funds made 63 first investments in the aggregate in Israeli and Israel-related high-tech companies (excluding investments in foreign companies and other entities), a 19 percent increase from 2004. Of the 63 First Investments, 22 (35 percent) were in Seed companies and 18 (29 percent) were in Software companies.

Total investments by the Top 10 funds (excluding investments in foreign companies and other entities) declined 14 percent to 154 in 2005 from 179 in 2004. Total investment figures include 94 Follow-on investments in Israeli and Israel-related high-tech companies in 2005, compared to 126 in 2004.

Novel voice analysis systems

Israeli voice recognition security software leveraged for UK dating product

The British PNC Telecom announced the launch of a new multi-channel dating service (www.datingdonut.com), featuring the Love Detector, one of the world's most sophisticated voice analysis tools.
The Dating Donut's unique Love Detector tool enables clients the opportunity to evaluate a prospective partner's interest level before agreeing to a date.

LVA (Layer Voice Analysis) technology analyzes 129 emotional voice layers to provide an in-depth reading of your friends' feelings as they speak on the phone. Excitement, confusion, stress, concentration, anticipation, eagerness and passion are among the responses revealed.
Developed in Israel, the technology was originally designed for the security industry before being approved for commercial use in the UK and the rest of Europe.

Darren Jones, Managing Director of PNC Telecom believes the Love Detector will prove invaluable in assisting clients in their dating search.

"These days, people are increasingly careful and picky when selecting potential partners. The Love Detector service makes sense and should help our clients decide whether they should waste their time with other prospective clients."

Virtual reality device aids people with MS

Virtual reality visual feedback cues can help people with multiple sclerosis (MS) to walk more quickly and lengthen their stride, Israeli researchers report.

Gait problems occur in roughly 85 percent of MS patients, Drs. Yoram Baram and Ariel Miller of Technion-Israel Institute of Technology in Haifa explain in the medical journal Neurology.

A virtual reality system that incorporates the user's movements into a visual display that provides feedback has been shown to improve gait in patients with Parkinson's. The researchers tested a more advanced version of the device with 16 MS patients.

The team found that patients whose walking speed was below the average for the group had a 13.5 percent improvement while using the device; those whose speed was already above average weren't helped much, seeing an improvement of just 1.5 percent.

Patients then took a ten-minute break, and were tested without using the virtual reality system. The below-average patients showed a 24.5 percent

residual improvement in speed, while those with above-average speed showed a 9.1 percent improvement.

Tests of the device in healthy people did not show any improvement, and in fact it reduced speed and stride length.

"This makes the results for the patients even more noteworthy, since improved apparatus and prolonged training are expected to reduce the burdening effect, hence, further improve performance," the researchers write.

The findings support the use of virtual reality-based approaches to rehabilitation in patients with MS, as well as other types of neurological disorders, they conclude.

South Korea selects Israeli firm to provide surveillance devices

South Korea selected an Israeli manufacturer to provide high-tech electro-optical surveillance devices to be introduced into fighter jets, according to South Korean news agency Yonhap.

The report said the South Korean Defense Ministry awarded the 70-80 billion won ($72-$82m.) contract to Israeli firm El-Op, to supply surveillance devices.

The surveillance device, named EO-X, is capable of photographing objects up to 100 kilometers away, according to the report.

The Israeli company defeated two U.S. firms Raytheon and R.O.I, and the French firm Thomson in the bidding competition.

A bright solar energy start-up

Solar energy in general and Solel in particular have long depended on legislation that grants tax credits for electricity from renewable sources. California and other states have passed laws that require a higher portion of electricity to come from alternative-energy sources. But it's not just increased attention from the U.S. government to alternative forms of energy that has made Avi Brenmiller, , chief executive of Israel's Solel, upbeat. "Our technology is already competitive with electricity produced at natural-gas power plants in California," claims the mechanical engineer.

According to the Israeli company, the price of producing a kilowatt hour of electricity in California using its technology now stands at about 10 cents -- that's on a par with the cost of electricity at a newly constructed gas plant, based on the current natural-gas prices.
When you factor in oil prices hovering above $60 a barrel, Brenmiller now believes that the demand for Solel's solar-thermal energy technology is about to take off.

Solel uses a method known as solar trough, which involves glass, parabolic-shaped collectors that are placed in rows and track the sun's movement during daylight hours. The collectors concentrate sunlight on to steel pipes that contain a heat-transfer fluid. That fluid is pumped through heat exchangers to generate steam at temperatures up to 400 degrees Celsius, which in turn powers a turbine to produce electricity.

The Israeli firm kept busy improving the efficiency of the heart of its technology, its heat-collection element. The investors have ponied up over $30 million over the past decade. The new generation of collectors is 50% more efficient. "Within five years, we'll bring the price of producing electricity down to 6 cents to 7 cents per kilowatt hour," predicts Brenmiller. At that price, he believes solar thermal energy could change the entire energy picture in many regions around the world.

In the past few months Solel has witnessed a surge in interest in its technology. On Jan. 10, it announced a $12 million deal to supply solar collectors for a power plant being built by Solargenix Energy in Boulder City, Nevada. The 64-Mw facility is the largest solar project in the past decade.
The Israeli company is also in negotiations for large-scale projects in California, Spain, and Israel. California is seen as a key market for the company as by law renewable energy must account for 17% of all electricity in the state by 2017
Brenmiller foresees tremendous potential in other Sunbelt states like Nevada, Arizona, New Mexico, and Texas, where there's growing interest in solar technology.
Solel is also eyeing Spain, where the government has

announced one of Europe's most ambitious renewable-energy programs. Brenmiller says he hopes to close several deals in the next few months. Under a new law that went into effect last year, Spain is subsidizing electricity produced at new alternative-energy plants.
Back in Israel, the National Infrastructure Ministry has approved plans for a 100-Mw solar-power plant at Ashalim in the southern Negev Desert. A recent study found that Israel could produce 2,500 Mw -- or nearly a quarter of its current demand -- from solar energy by 2025.
Solel expects the increased interest in its technology to lead to an eightfold rise in revenues, to $30 million this year, and more than $100 million in 2007. It's already in the process of hiring dozens of new engineers to meet the growing demand.

Solel has set up subsidiaries in the U.S. and Spain but hopes to keep research and development at its Israeli facility.
Moreover, there are plans for an IPO in 2007 if the company's upbeat projections come to fruition.
So far, Solel has the market largely to itself as it has the only proven solar thermal technology currently available. However, Germany's Schott AG, which until recently supplied the Israeli company with the high-quality specialized glass used for the collectors, is planning to enter the field. Other companies are also said to be developing similar technology.

NICE closes year with $34.6m. profit

Digital recording technology company NICE Systems (Nasdaq: NICE ; TASE: NICE) has reported record revenue of $311.1 million for 2005, representing 23.1% growth over 2004.
Pro-forma net profit for the year was $34.6 million or $1.67 per fully diluted share, compared with $22.2 million, or $1.19 per fully diluted share, for 2004. The consensus analysts' estimate was for earnings per share of $1.64 in 2005.

NasVax finishes animal trials on flu vaccine

NasVax Ltd. NasVax has successfully completed another animal trial for a product that delivers the influenza vaccine intranasally.
The trial was carried out by the British firm Retroscreen Virology on weasels, which are considered one of the best animals on which to test influenza vaccines.
The trial included a control group, which did not receive the vaccine, a group that received a commercial influenza vaccine via intrasmuscular injection, and a third group that received the vaccine administered intranasally using the NasVax technology. The weasels were exposed to the flu virus 28 days after receiving the vaccination, and then examined for the drug's effectiveness.
Retroscreen's trial report notes that the intranasally administered vaccine was found effective at reducing flu symptoms as judged by measuring the animals' body weight, body temperature, and the amount of influenza virus found in their nasal cavities.

Based in Herzliya, Nasvax is a private company held by the Meytav Technological Incubator (32 percent), Prof. Yechezkel Barenholz (9.9 percent), Yissum, the technology transfer company of the Hebrew University of Jerusalem (6.5 percent), and Pontifax, which is headed by Teva Chairman Eli Hurvitz (9 percent).
Human trials of the technology are also being carried out to determine whether the technology is safe to use. According to NasVax CEO Itzik Goldwaser, the 100-subject trial that began last October and will end in April.

Deutsche Telekom to invest $12.1m. in Israeli research center

Deutsche Telekom AG said it will invest $12.1m. by 2008 in a research and development center it has set up jointly with Ben Gurion University in Beer Sheva, Israel.
The new institute, an academic satellite of the Deutsche Telekom laboratories based at Berlin's Technical University, will have a special focus on network security, the telecoms giant said in a statement.

'As Europe's leading network operator, security in our networks has the highest priority for Deutsche Telekom,' chief executive Kai-Uwe Ricke said.

TrafficSense alerts drivers of traffic tie-ups on cell phones

TrafficSense from Cellint uses anonymous signaling on cell phones to directly relay traffic information quickly and easily. Cellint's "VirtualSensor" technology finds the exact location of the mobile

phone by analyzing the control signals on the cellular network.

"The idea behind TrafficSense is built on the premise that increasingly, everybody has their cell phone on while they're driving," explained Modena, Cellint's Vice President of Business Development and Marketing.
"The information is relayed directly to the traffic management system of the road operator - it's quick, easy to install, and there's no problem with privacy.
It finds the exact locations of all active mobile phones without burdening the cellular network and without changing it in any way, simply by analyzing the control signals on the cellular network.
Unlike traffic detection sensors that detect incidents and measure travel times at sensor locations only, the TrafficSense technology allows travel time measurements over dynamic travel intervals and accurate incident detection anywhere on the roads.
While those approaches showed promise at the time, none of those early efforts proved both economically and operationally feasible for transportation applications.
The major testing ground for TrafficSense has been the Ayalon Freeway, the main highway in Tel Aviv where the system has been operational since 2002.
This issue becomes vital when dealing with the system Cellint has developed for drivers, which will revolutionize the way in which commuters will get from place to place.

Visonic to supply PowerMax

UK-listed Israeli group Visonic said it has won preferred supplier status from Group 4 Securicor PLC for the supply of the PowerMax, its flagship wireless residential security system.

Visonic quoted Damon Jones, Group Director of Procurement and Director Security Systems Europe at Securicor, as saying: 'This contract was signed in the framework of Group 4 Securicor's decision to consolidate its supply chains and focus on key strategic business partners. The products will be launched on a global scale in the coming months'

Catalyst II raises $50 million in first closing

The Catalyst Venture Capital fund completed its first closing, raising $50 million in pledges from investors for its sequel fund, Catalyst II.
Edouard Cukierman, general manager of Catalyst and of the Cukierman investment company, commented that unlike the first Catalyst fund, this one will also invest in traditional industry, too.

Catalyst I had focused on hi-tech and essentially behaved as a venture capital fund while this second one will be a private equity fund with holdings in both hi-tech and industry, Cukierman explained.
"Catalyst II will be investing between $3 million to $5 million in each transaction, but that won't stop us from contending in deals of $50 million and more," Cukierman said during the recently held Go4Europe Conference. Investors in the fund may also elect to co-invest in specific projects, while Catalyst would handle the due diligence, he explained.

Siemens invests in Israeli water technology

Siemens (NYSE: SI; XETRA: SIE) is examining investments in Israeli water technologies. Siemens, is trying to position itself as the world's top water technology company, has decided to cooperate with the Mekorot National Water Company in developing water technologies and to jointly sell them to countries around the world.

USFilter CEO and Siemens Water Technology head Dr. Roger Radke reached an agreement to this effect. Mekorot chairman Baruch Oren and CEO Ronen Wolfman. Siemens Israel managing director Oren Ahronson said this was only a first step for Siemens, and that the company saw itself as a strategic partner with Israel in the development of water solutions.

Siemens has $2 billion in water solutions sales a year. The company operates in 120 countries, and the company's chiefs have set a target to double sales within three years.

Technology to lead M&A activity

Mergers and acquisitions are expected to once again lead the way in fundraising for Israeli technology companies in 2006, building on the record of 39 transactions completed in 2005.

Technology companies raised $12.1 billion last year through M&A activity, showing a rise of 600% from 2004, according to Investment bank Leap Capital's review of the sector.

"Investors are attracted to the immediate returns which M&A's bring, and this will continue to be their choice method of exit," said Gerald Segal, managing director

of Leap. “Israel remains a very attractive M&A market in technology and we see this in the big international companies which made purchases there.”

Large international corporations including Intel, Cisco, eBay, Kodak, HP, Agere, McKesson, Alcatel, Juniper, RSA Security and Broadcom all bought into Israeli tech in 2005.
Half of the acquiring companies were Israeli, the report noted.
As could be expected, M&A outsold initial public offerings in activity, despite a 100% rise in the number of companies going public. The trend Segal said would continue into 2006.

One reason for this, he added, is that the criteria for going public are still high.

“Even the traditionally less stringent Alternative Investment Market (AIM) in London has raised the requirements for IPOs,” Segal said.

Of the 14 technology companies that completed IPOs in 2005, seven listed on the AIM, six on the Nasdaq, and the remaining company listed on the Singapore exchange bringing the total funds raised to $557m. While the resulting funding was only a slight increase over the 2004 level, it was a far cry from the $1.33 billion raised from IPOs in the hi-tech bubble year 2000.

While the local companies noticeably avoided their home market, Segal said this was to be expected given the higher valuations abroad and the tendency to be near to where most investors are located.

While the year marked the first time that the AIM exchange exceeded the Nasdaq in Israeli tech IPOs, Leap was cautious about the London market as a suitable exit alternative for Israeli hi-tech, given the performance of those companies listed there.

The first five companies to list in 2005 on AIM were down an average 23% from their issue price (the other two IPOs were completed in December), despite the exchange as a whole rising 4% for the year, the report said.

Other highlights of the report showed an increase in the participation of foreign venture capital firms in Israel and a total VC investment of $890m. spread between 99 private technology companies.

Israel and Greece sign R&D agreement

Israel and Greece signed an agreement for industrial research and development, during President Moshe Katzav’s recent state visit to Greece. The agreement aims to provide Israeli companies with access to regional markets.
Greek Development Minister Dimitris Siofas signed on behalf of Greece.
Trade between Israel and Greece in 2005 totaled $450 million, of which $200 million was generated by exports and $250 million was accounted for by imports. This figure reflects the growth in trade between the two countries, which in recent years has increased by an average yearly rate of 12%, including a sharp rise in Israeli exports to Greece in 2004, ahead of the Olympic games in Athens..

AudioCodes 4Q earnings jump 50%

AudioCodes Ltd. (Nasdaq: AUDC) the Israeli developer of audio compression technology, fourth-quarter profit rose 50 percent, buoyed by higher sales.
Latest results were in line with Wall Street targets. In the latest three-month period, AudioCodes’ earnings were $3.9 million, or 9 cents per share, up from $2.6 million, or 6 cents, the year before. Revenue gained 21 percent to reach $30.6 million.

AudioCodes’ latest-quarter results matched the average earnings and revenue estimates from analysts surveyed by Thomson Financial.
Annual earnings rose to $13.4 million, or 31 cents per share, from $5 million, or 12 cents, in 2004. Revenue of $115.8 million was 40 percent higher than $82.8 million last year.

Startup turns organic waste into energy

Genova was founded in September 2004, is headquartered in the northern town of Karmiel.

Biomass - organic waste - is generated as a by-product of many types of industry worldwide, such as forestry, and crop and livestock farming.
The biomass is generally transported at great cost to a landfill to rot, or it is burned; both rotting and burning create methane, a greenhouse gas which plays a major role in global warming. However, if harnessed properly, methane can be a very valuable source of

energy.

With increasing concern over the supply of fossil fuels for electricity generation, as well as the environmental implications of burning coal and oil, why not do something useful with biomass, thought Dr Yuri Wladislawsky, an engineer and the founder of the company, who emigrated to Israel from Tblisi, Georgia, in 1996.

Wladislawsky decided to focus first on the biomass produced from the olive presses that are a feature of the Middle Eastern landscape, "because olive waste is difficult waste to process because of the pits," explains Yonat Grant, an industrial engineer who is the CEO of the company, which has two other employees as well as Wladislawsky and was set up within the Misgav Technology Center incubator, where it will stay for another year. If the company can succeed with olive waste, she says, then any other biomass will be simple in comparison.

First, the olive waste is heated and dried and then it is introduced into the reactor. Here it undergoes two processes, pyrolysis and gasification, which involve the biomass being heated to 800 degrees centigrade, at which temperature its molecules break down. A combination of high-calorie gases including methane and carbon monoxide are produced which, because they are lighter than air, flow upwards through a pipe into a standard gas turbine to generate electricity in the usual way. The other by-product is coke, which can be turned into the active type of coke that can be sold for use to power air conditioners or as filters for various substances.

Harnessing the power of biomass is not a new industry and there are a number of companies around the world who are attempting to show that biomass can replace some of the fossil fuels we use, but Genova's technology employs a novel technique, which the company prefers not to disclose, for maintaining the high temperatures needed for the process.

The company's high efficiency and low cost has attracted much attention, piquing the interest of the Israel Electric company, Israel's sole electricity provider. "Israel Electric is looking for alternative sources of energy, not for economic reasons but for environmental ones, for society," says Granot. Israel Electric has added a $60,000 investment to the NIS 1.4 million (approx $300,000) that the company receives from the government-run Misgav incubator over the two years of its stay. Genova will be relocating to Misgav shortly.

Genova already has a fully-working prototype to prove that the patent-pending concept works, and is now planning its first pilot project, a 200 kw/hour plant in the Druze village of Julis in northern Israel. The plan is that olive waste from Julis' olive oil press will be fed into Genova's reactor and produce enough electricity to power the press, so it will be self-sustaining.

"For 8000 hours, which is one year of production, we need 1600 tons of waste," explains Granot. An olive press usually produces waste which is one-third of the weight of the olive oil produced, so 1600 tons of waste would be produced from a press making 4800 tons of olive oil. The press in Julis is a little smaller than this, so some waste will be brought in from other presses.

"The plan is to build the pilot reactor for the next olive season, which is September/October 2006," says Granot. Genova is now looking to raise $1.25 million to pay for the pilot project and for marketing and sales of the reactor, which could be on the market in 2007.

BioLineRx In-Licenses Two Additional Drug Candidates from TAU and the Technion

BioLineRx, Ltd., Israeli drug development company, announced that it has signed two license agreements for the development and commercialization of BL-2050, for the treatment of peripheral vascular disease (PVD) and BL-2060, a novel antibiotic.

The worldwide exclusive license agreements were signed with Ramot at Tel Aviv University and The Technion Research and Development Foundations (TRDF) respectively. BioLineRx plans to develop the projects through BioLine Innovations Jerusalem (BIJ) under the National Biotech Grant received in November 2004 from the Israeli Office of the Chief Scientist. BL-2050 has already received approval for entry into the BIJ program and BL-2060 will be submitted for review in the coming weeks.

BL-2050 is a novel drug candidate that has demonstrated in animal models the ability to grow new, stable, functional blood vessels in an ischemic environment. i

BL-2060, licensed from TRDF, is a breakthrough

approach to treating bacterial infections, developed by Professor Amram Mor, a member of the Technion Faculty of Biotechnology. Antibacterial peptides have been well known as potent molecules although their systemic use has been limited due to problems of hemolysis. Using his novel system, Professor Mor has generated antibacterial peptides that kill bacteria without causing hemolysis, making this potent class of molecules available for systemic use.

BioLineRx also announced progress on its other pipeline candidates that are advancing toward human clinical trials. BL-1020, BioLineRx's first in class antipsychotic for schizophrenia, is on track for entering human clinical trials in 2006, and was recently presented at the Israeli Society for Neuroscience meeting in Eilat, Israel. BL-1040, BioLineRx's novel treatment for myocardial infarction was the subject of a late breaking abstract at the recent American Heart Association meeting in Dallas, Texas.

Preserved in Crystal

With a new method scientists can identify novel protein molecules in days rather than months

A team of scientists at the Weizmann Institute of Science and the Hebrew University of Jerusalem has developed a method that could speed up the process of identifying novel protein molecules for medical or biological research hundreds of times over.

In today's high-throughput searches for specific genes, proteins or protein interactions, plates containing rows of tiny wells have replaced old-fashioned test tubes. However, trawling for a gene or protein with just the right qualifications may require sorting through millions, or even billions, of possibilities. Instead of wells, the new method, developed by Dr. Dan Tawfik and Amir Aharoni of the Institute's Biological Chemistry Department and Prof. Shlomo Magdassi of the Hebrew University's Institute of Chemistry with support from the Israel Ministry of Science and Technology, relies on microscopic droplets of water suspended inside oil droplets. Using their system, millions of tests can be performed at once.

The method, which relies on a type of emulsion dubbed WOW, for water-oil-water, takes a page from living cells, which employ a fatty membrane to keep the inside and outside environments separate. The oily layer surrounding each miniscule water droplet acts as a barrier, keeping genes, proteins and other materials contained. Alternately, the team inserted harmless bacteria containing genes for testing into the drops. Confining individual tests within a cell-like bubble allowed them to employ a widely-used method for analyzing living cells. This method involves adding a fluorescent marker that lights up in color when activated by the right protein and sorting through the cells for those containing the marked proteins and their coding genes. Automated devices for sorting cells can handle many thousands of droplets per second. "Searches that now take a year to complete can be done in a matter of days," says Tawfik.

To demonstrate the efficiency of the system, the team isolated a new enzyme from a gene that was mutated artificially to produce random variations. They generated the enzymes in the droplets and sorted them according to which ones were better at cleaving a specific toxin in the bloodstream. The results from a screen completed in one afternoon were equivalent to those previously obtained through several rounds of mutation and screening – a several-month process.

Three Israeli universities featured in The Times' top 200

A recent ranking of the best universities in the world features three Israeli universities in its study.

The classification, conducted for the second year by The Times' Higher Education Supplement, put the Hebrew University in 77th place, Tel Aviv University 188th and the Technion - Israel Institute of Technology in 194th.

Some senior university officials focused on their standing in specific categories that showed their institutions in a positive light, while others minimized the importance of the report.

Officials at Israeli universities said institutions of higher education here have a disadvantage compared with English-speaking schools.

"Few will study Hebrew in order to come and work or teach in Israel," one senior academic said, citing "the security and political situation in recent years," as another problem.

The Hebrew University of Jerusalem ranked 20th among the 50 best universities outside North America and Europe. The University of Beijing in China and other Asian universities led the list.

Tel Aviv University was ranked 57th in the top 100

universities for the sciences, and the Technion 58th. The Hebrew University ranked 98th.

In a table of the 100 top biomedical institutions in the world, the Hebrew University took 71st place and Tel Aviv University was 89th. In the social sciences, the Hebrew University took 54th place and Tel Aviv University took 68th. Among the 50 best universities in the humanities and the arts the Hebrew University was ranked 36th.
Tel Aviv University's deputy vice president for research, Professor Hagit Messer-Yaron, called her institution's ranking in the sciences "very respectable" considering "that research achievements here are done with far less means than those of other universities on the list. "If we had the financial resources of the universities ahead of us on the list, I'm sure we would reach a higher place," she added.
Others at Tel Aviv University said the survey results backed up their policy of multidisciplinary involvement.
"In a world where research is becoming increasingly interdisciplinary," Tel Aviv has an advantage, Messer-Yaron said. She added that the survey showed Tel Aviv had to improve and that it had, considering that last year it did not make the list at all.
The Technion, which did not make the general top-200 list, was ranked 25th in the list of the world's 50 leading universities in technology.
Communities were ranked on a 100-point scale by six indicators, including citations, staff-to-student ratios, proportions of international staff and students, and peer reviews.

Boeing joins Israeli anti-missile venture

Boeing has joined forces with an Israeli company to pursue the contract to develop a short-range ballistic missile defense system for Israel.

The U.S. aerospace giant announced that it and Israel Aircraft Industries (IAI) would jointly pursue the Short Range Ballistic Missile Defense (SRBMD) project, which Israel wants as a defence against both missiles and long-range artillery rockets.

Next month, the Israeli military will select an Israeli-U.S. industry team for the risk reduction phase of the SRBMD program. The full-scale development and production phases will be a cooperative effort between the Israeli Missile Defence Organization and the U.S. Missile Defence Agency.

Boeing and IAI worked together previously on missile defence with the Arrow II, Israel's operational defense system.

"This is an opportunity to build on the exceptional partnership that Boeing and IAI have established through the co-production of the successful Arrow II interceptor," said Debra Rub-Zink, vice president for Boeing Integrated Missile Defence. "It is our privilege to join forces once again with IAI to provide leading edge technology to rapidly and effectively address threats as they evolve."

Boeing did not disclose any details of the proposed technology or the financial commitments.

Missile defence is a high priority for Israel, which has weathered not only the Scud launches of the Gulf War, but scores of attacks by smaller rocket fired by Palestinian fighters.

The Arrow II is designed to go after longer-range rockets; however, Israel has aggressively pursued technology to defeat the small shorter-range weapons that pack less punch but require far less time between launch and impact.

Security training looks to Israel

American corporations are upping security at their overseas locations in areas prone to violence.

After a period when Islamic protestors destroyed Western government buildings and private businesses in Pakistan and Lebanon in reaction to offensive Danish cartoons depicting the prophet Mohammed, corporate America is taking steps to protect its offices and personnel.

Companies like Oracle Corporation, an Internet technology enterprise, are seeking the assistance of security training firms like Miami-based Security Solutions International.

SSI, which has been training security firms, government agencies, and corporations how to manage security for almost 20 years, recently unveiled a new training seminar in Israel.

Participants spend six days looking at the counter-terrorism structure of Israeli companies and government buildings in cooperation with Israeli police and the

ministry of tourism.

"We did look at homeland security from a different points of view and show them the inside story on how Israel does homeland security," said SSI president Henry Morgenstern told UPI from Israel where he is leading the company's fourth security training seminar.

Training groups made up of corporate security staff and law enforcement officers toured a power plant overlooking Gaza and the Knesset, the Israeli parliament, to see how counter-terrorism is done in a nation where suicide bombing is a constant threat.

Joe Bierly, who works for Oracle, attended the program in Israel. He said that being in Israel helped to understand how Israel has become successful at reducing terrorism, "The intensity and the seriousness that they have for [counter-terrorism], you have to be there to really appreciate that."

Morgenstern, who lived in Israel during the Palestinian uprising, or Intifada, said that his company uses Israeli methods in their training because Israel was the birthplace of counter-terrorism security. "Necessity is the mother of invention...they invented it because they had to," he said.

Company to offer 3-D navigation for 3G

3DVU has developed a 3-D navigation technology, currently available in some Japanese cars, will be accessible to mobile devices by the end of 2006.

The Ra'anana, Israel-based 3DVU, formerly known as Flyover Technologies, plans to expand its services to 3G cellular phones, PDAs, mobile handsets and PCs using Intel's XScale technology. Company Chief Executive Officer Isaac Levanon said 3DVU is the first to offer this "Visual Map" imaging to handheld devices.

"You have these programs like Google Earth, which are used mainly in the office," Levanon said in a telephone interview from the airport on his way to Barcelona. This technology, he said, will help people actually navigate.

It's also a much bigger market than 3DVU's current ventures. For every one car navigation system, Levanon said, there are four mobile devices that could handle his company's technology.

The target consumers are members of Generation X and Y who are already familiar with computer and cell-phone technology, Levanon said.

Another reason the move will be so innovative, Levanon said, is because of the way the data is streamed to the mobile devices. He explained that when existing image navigation software pans across to nearby areas just off the screen, the software refreshes the entire screen. Thus, scrolling a bit to the east, for example, looks like several still photographs displayed one after another on the screen.

3DVU's technology, Levanon said, simply adds pixels in the direction of the pan. In this case, panning would look continuous, like scrolling down on a Web site. This difference is not only smoother, but also costs the user and the operator less, Levanon said.
Reviews of the company's car navigation systems have been mixed. While Michael Rogers wrote in Newsweek in 2003 that 3DVU's technology was an exciting "hint of the future," Rafe Needleman wrote in Red Herring in 2001 that he'd rather have "the richness of a good (traditional) map, the exclusion of data noise, and the art of fitting that information into a single image."
"On the other hand," he wrote, "when I'm lost, I just want directions."

Launched in 2000 at the height of the technology boom in Israel and around the world, the small, private company makes a profit, Levanon said. He declined to disclose any other revenue details.

In addition to the expansion into 3G, the company is hammering out a deal with Korean automaker Daewoo and with U.S. car companies, as well.

A statement on the company Web site said 3DVU has partnered with "satellite remote data-sensing entities, aerial photography companies, mapping data providers, navigation software makers and car navigation system designers and manufacturers." Also listed, as partners are T-Mobile, Panasonic and Microsoft.

Asia Eurospace 2006

The recently held Asian Eurospace 2006 featured two Israeli exhibits that drew considerable attention. One of these was the Heron UAV System is an

operational fourth generation long-endurance medium-altitude system based on leading-edge technology with new fully automatic take-off and landing features. It provides deep-penetration, wide-area, real-time intelligence to national agencies, theater commanders and lower echelons.
The Heron provides ample modular space up to 250 kg for customer furnished equipment, is interoperable with other MALAT UAV systems and has demonstrated 52 hours of continuous flight.

Hermes - 450

The Hermes 450 is a medium size UAV supplying real time intelligence data to ground forces. The UAV (length 6.1 m, wingspan 10.5 m and weight 450 kg), was designed for tactical long endurance missions.
With multi-payload capability (150 kg, 300 L, 1.6 kVA) the Hermes 450 is effective for ISTAR, SIGINT, communication relays and other missions for Division to Corps levels.
It is powered by a 52 hp rotary UEL engine that provides a maximum speed of 95 KTAS@SL, altitude over 18 kft, endurance over 20 hours.
The Hermes 450 features fully redundant avionics, fully autonomous flight, LOS and/or satellite communication data link with a fully composite structure that is highly mobile and easily deployed.
It shares a common Ground Control Station, data link and avionics with the entire Hermes family.

A Laser reborn

High among the most mportant Israeli innovations was the development of carbon dioxide medical lasers.

The one individual who stands out in the field is Professor Isaac Kaplan, a brilliant surgeon, whose reconstructive surgery helped to restore the bodies of wounded soldiers).
In the 1970s, early in the history of the development of medical lasers, he focused his attention on research, which resulted in the development of a broad line of carbon dioxide surgical lasers. This gave birth to an important Israeli high-tech industry. After overcoming the technical difficulties, several thousand of the carbon dioxide surgical medical lasers were sold worldwide. The company that manufactured the lasers was absorbed by another concern.

More than 30 years later a small start up company, Mediclase, established in 2003, has developed and is marketing a low cost, portable carbon dioxide laser, similar to the one invented by Prof. Kaplan, but smaller and considerably less expensive. Mediclaser product folds neatly into a suitcase, depending on the configuration, weighs 35-75 lbs.

Dr. Zeev Pam, who purchased several of the Mediclaser units says “it is an excellent unit and the price is highly competitive”.

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