ISRAEL HIGH-TECH
& INVESTMENT REPORT

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A Country Without Minerals

No country has been as bereft of minerals as Israel. The only natural resource was the potash to be extracted from the Dead Sea. However, a whole industrial infrastructure had to be established. The only natural resource was oranges.

It I somewhat difficult to analyze the emergence of Israel's high-tech industry. Israelis as such do no possess any specific qualities or talents. However, a closer view indicates that its achievements were connected with specific needs. Typically was the invention of drip irrigation. Recently, Netafim, a drip irrigation company was sold for $750m. The shortage of water has led to the development of desalination. Recently Israelis commissioned the world's largest desalination plant. It has become an international success and an export industry has been formed around it.

However, the country's defense industry is most typical of building in response to a need. The country has been attacked six times and the for defense material has been great. The first item to succeed on the world markets has been the Uzi, submachine gun.One of the greatest successes has been the UAV. The UAV is an acronym for Unmanned Aerial Vehicle, which is an aircraft with no pilot on board. UAVs can be remote controlled aircraft flown by a pilot at a ground control station) or can fly autonomously based on pre-programmed flight plans or more complex dynamic automation systems. UAVs are currently used for a number of missions, including reconnaissance and attack roles. For the purposes of this article, and to distinguish UAVs from missiles, a UAV is defined as being capable of controlled, sustained level flight and powered by a jet or reciprocating engine. Israel Aircraft Industries and Elbit are the foremost manufacturers of UAVs. Hundreds of the se units have been exported. Russia is among the customers for Israeli UAVs.

Israel Aircraft Industries designed and built the Lavi, the first fighter jet aircraft. However,

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Israel conceded to America's demand that the plane not be built.

The Dead Sea minerals have become the basis of a healthcare industry. The Dead Sea salts are sold worldwide.

However, the situation changed in the wake of the Six Day War when President Charles De Gaulle, in a fit of anger when Israel won the Six Day War embargoed all French material to Israel. . Parts for the French built Mirages were no longer supplied.

Thought was given as how to overcome the problems created by the embargo. It was Dan Tolkowsky, the onetime Chief of Israel's Air Force who suggested that Israel build its own high-tech industries to fill the void. Tolkowsky, as head of the Israel Discount Bank Investment Company, was in a position to implement his ideas. In 1980 he helped to float the shares of Scitex Corp. The money thus raised allowed Scitex to become a world leader in digital printing. The ability to adjust images in terms of shapes and colors helped Scitex to become a leader in the field.

At the same time A Haifa based company became a leader in computer-aided tomography. The ability to image tissues allowed the CAT scanner to become a major analytical too

Rafael designs, develops, manufactures and supplies a wide range of high-tech defense systems for air, land, sea and space applications.

Rafael was established as part of the Ministry of Defense more than 60 years ago and was incorporated in 2002. Currently, 9% of its sales are invested in R&D. Rafael know-how is embedded in almost all Israel Defense Forces (IDF) systems in operation today. The company has a special relationship with the IDF, developing products according to the soldiers' specific requirements in the field. Rafael has also formed partnerships with civilian counterparts to develop commercial applications based on its proprietary technology.

In the early 1980s Professor Isaac Kaplan, an expert in facial reconstruction surgery, persuaded Yaa'cov Meridor to purchase a laser instrument. The surgeon, together with engineer Uzi Sharon devised in 60 days the world's first surgical laser. It became an instant medical hit with 1,500 being sold the first few years. Laser closed its doors due to business reasons. Variations of its laser units are in use to this day.

Another company that became a world leader was Ormat Technologieswhich is a world leader in the geothermal power plant sector. As a geothermal company has over four decades of experience in the development of state-of-the-art, environmentally sound power solutions, primarily in geothermal and recovered energy generation. In addition to designing, developing, building, owning and operating geothermal energy and recovered energy-based power plants in the United States and other countries, Ormat also designs, manufactures and sells power units and other power generating equipment for geothermal power plants and recovered energy-based electricity generation.

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Israel is the world's seventh satellite country. In the 70's and 80's Israel developed the infrastructure needed for research and development in space exploration and sciences. This activity was marked with the development of satellites and launching facilities, and had the proclaimed goal of Israel entering the "club" of states with those abilities. In November 1982 the Minister of Science and Technology, Prof. Yuval Ne'eman, announced the formation of an agency, which could coordinate and supervise a national space program.

In 1984 the National Space Knowledge Center was established in cooperation with Israel Aircraft Industries; a contract was signed between IAI and Ministry of Defense for the development of the needed infrastructure and of Israel's first observation satellite. This came to fruition in 1988 when Israel launched the first in a series of Ofeq satellites and thus became one of only a few nations in the world possessing an indigenous space launching capability (see timeline of first orbital launches by country). Dr. Moshe Bar-Lev headed the project management at Israel Aircraft Industries for many years.

Perhaps the country's greatetst achievement has been producing 11 Nobel Prize Winners, ranging from literature to chemistry.

The above are just a few achievements by Israel's world of technology. This book is dedicated to introduce you to many achievements.

Bayer exec eager to conduct R&D in Israel

"We collaborate with several Israeli companies," Bayer SVP and head of global clinical development said Jorge Muller "For example, with Medgenics Ltd. (AIM:MEDG; AMEX: MDGN) and Omri Laboratories, founded by Robert Taub. We have a hemophilia product that is one of the leaders in this field, and we continue to seek ways to improve its delivery. Medgenics is developing technology that enables patients to produce, within their bodies and on a long-term 1basis, their own natural human protein therapy for the treatment of chronic diseases, which we are studying. Omri has developed a method for extending a substance's life so it can be injected less frequently. But a trial we conducted failed to show sufficient efficacy, so we decided to discontinue with them."

Bayer AG (DAX: BAYN) is the world's 13th largest pharmaceutical company, with a market cap of €43 billion. The company's healthcare division invested $3.5 billion in R&D in 2011 and it specializes in prescription and non-prescription drugs, medical equipment and radiology, veterinary medicine, composite materials and seeds (where it has a cooperation agreement with Evogene Ltd. (TASE:EVGN).

Cooperation agreements with big pharma companies are an important source of revenue for Israeli drug development start ups, and acquisitions by these companies are the main type of exit for them. Nasdaq IPOs are increasingly rare, and mergers and acquisitions are usually preceded by cooperation agreements. Hence the importance for start ups in attracting the attention of big pharma, and most start ups consult with big pharma from the earliest stages, and adjust their products to the big companies' portfolios.

Müller mentioned several drugs that Bayer considers as its growth engines in the coming years. One is Nexavar, a treatment for kidney and liver cancer. "This is the only product that extends the lifespan of liver cancer patients, and we're now studying it for other cancers, such as breast cancer and thyroid cancer," he says. "Last year, we completed three trials for regorafenib for the treatment of colon cancer in patients who failed to respond to other therapies. Our treatment improves their condition."

"An even more innovative product in this field is a radium molecule that emits alpha particles that kill targeted metastasized tumors in the bones of prostate cancer patients. Radium, which is structured like calcium, is absorbed by the bone instead of calcium, especially in locations where there is high calcium replacement, where the metastasis is. The drug

releases the alpha particles in this location."

Müller adds, "Another approach is the use of antibodies that can identify cancer cells. These antibodies carry a toxin and bring it to the tumor. When the antibody comes into contact with the tumor, it releases the toxin. Bayer has a product like this under development. Biocancell Therapeutics Ltd. (TASE:BICL) definitely has a similar product."

Bayer's prognosis for oncology?

Müller: "Since 2000, we've seen development in targeted treatment, and even at the level of tissue targeting. The advantage of such treatment is it can be taken every day for life, in the hope of turning cancer into a chronic disease rather than a lethal one. In future, within ten years, tissue samples will be taken from a patient for so that drug cocktail best suited for that tumor, that patient, and that tissue will be prescribed."

This resembles the method developed by Champions Oncology Inc. (Bulleting Board: CSCR), which has operations in Israel, to infect mice with the tumor of a specific patient in order to decide on the therapy.

"That's an interesting model, but the tumor changes and what works on a tumor today will not necessary work a month from now. That is why a fast and cheap method is needed for selecting the drug cocktail for a tumor at a given moment. By the way, there are new studies that show that even one tumor of one patient is not uniform throughout."

"We're committed to rare diseases"

Another important field for Bayer is stroke prevention. "Xarelto, a drug for stroke prevention was our biggest ever drug development program, costing $2.5 billion. The clinical trials included 75,000 patients from all over the world, and the drug is now approved for marketing in 110 countries for the treatment of strokes and cardiac arrhythmia, as well as for the prevention of embolisms in patients undergoing orthopedic surgery."

Israel's MCS Medical Compression Systems (DBN) Ltd. (TASE:MDCL) developed a product from the prevention of embolisms during surgery, which it says is better than medication.

"I am unfamiliar with MCS, but I know most of the medical devices produced for compressing the limbs to prevent embolisms. They do not approach the efficacy of Xarelto."MCS says that it has tested its product against drugs, and found it equally effective and safer.

"Did they show this on 75,000 patients? Xarelto is the only drug that reduces cases of death from blood clots. I am unaware of any medical device that can do this."

Müller also sees ophthalmology as source of growth, and Bayer has a new development for the treatment of age-related blindness. "Today, the disease is mainly treated with a drug which prevents deterioration, but requires an injection into the eye. Our product reduces the number of injections. I believe that most of the improvement in this area will be in the convenience of treatment, not in efficacy."

"Another product that I am enthusiastic about is a treatment for pulmonary blood pressure, which is undergoing a Phase III clinical trial. This is a disease that mostly affects young women and greatly shortens their life expectancy. We're also examining this product's potential on patients who had blocked pulmonary blood vessels."
This is a rare disease that already has several drugs. Is this development worthwhile?

"We're also committed to rare diseases. Even through drugs exist, these patients suffer from shortened life expectancy. This is a field that needs more treatments."

Other fields where Bayer is active are fertility, especially uterine fibroids, and menopause-related problems such as endometriosis (in which uterine lining cells grow in other areas of the body); and cardiology, especially arrhythmia; kidney diseases and diabetes.

"Israelis keep their promises"

Bayer recently decided to reduce the number of countries with which it conducts clinical trials and R&D.

"Israel remains one of the 41 countries where we still operate because we're very pleased with it compared with other countries. Israel has excellent academic and medical institutions, high public interest in science and technology, and a diversified community in terms of genetics and life styles. In addition, Israelis are reliable and meet their timetables.

Are you sure you're talking about Israelis?

"Absolutely. Israelis keep their promises. Clinical trial sites in Israel always met their patient recruitment targets, and these centers are often at the top of our list in terms of number of patients recruited."

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So Mr. Abramowitz, who had spent six months at Ketura in the early 1980s as part of a Young Judaea program, quickly abandoned his plans to spend a quiet family sabbatical with his wife and children in southern Israel. Instead, he went into partnership with Ed Hofland, a businessman from the kibbutz, and David Rosenblatt, an investor and strategist from New Jersey, to found the Arava Power Company, now the leading commercial developer of solar power in Israel.

After more than five years of political and regulatory battles with the Israeli authorities, the company has transformed 20 acres of a sand-colored field on the edge of the communal farm. It now glistens with neat rows of photovoltaic panels from China — 18,600 in all — that harness the sun. There is no smoke, only a slight buzz in the spotless rooms where the panels' current is turned into electricity that can be fed into the electrical grid. Small openings in the perimeter fence allow animals

to cross the field.

Depending on the time of year and rate of energy consumption, this field provides power for as many as five communities.

Siemens, the German conglomerate, was brought in as a partner and invested $15 million, and its Israeli branch built the field. The Jewish National Fund, a century-old Zionist group most associated with planting trees in Israel, made an unusual strategic investment of $3 million in a twist on the early national ideal of trying to make the desert bloom.

In forging a path for commercial solar energy, Mr. Abramowitz said he endured regulatory battles involving two dozen agencies as big as the Israeli Agriculture Ministry and as small as the local planning agency on issues like zoning changes and renewable energy quotas.

Along the way, Mr. Abramowitz — who left the kibbutz for Jerusalem in 2009 but still visits often — became known in Ketura as Captain Sunshine. “He got his nickname, first, because of his sunny personality,” said Elaine Solowey, a member of the kibbutz, “and, second, because anyone who beats the government bureaucracy is a superhero.”

Arava Power’s pioneering work has not gone unnoticed. Other communal farms and communities in the arid reaches of southern Israel are rapidly turning to renewable energy: solar energy is a harvest that does not require irrigation.

Last month, Israel’s Public Utility Authority issued licenses for nine larger solar fields, including a 150-acre site at Ketura that will eventually meet one-third of the peak daytime energy needs in the nearby city of Eilat.

Ketura’s new solar field will be built across the road from the kibbutz in a rift valley between two mountain ranges. The near-constant breeze from the north will naturally cool the backs of the panels, which will face south. With up to 14 hours of sunlight in the summer, an average of only 15 cloudy days a year and access to the national electricity grid nearby, the area has conditions that are perfect for producing solar energy, Mr. Abramowitz said.

“God could not have invented a better place to do solar power,” he said during a recent tour.

Arava Power has entered deals to lease land from numerous farms and communities in southern Israel. It has also teamed up with Bedouins in the Negev Desert: the tribes will lease their lands to Arava Power for solar installations, and the company will provide jobs for the clans. In February, the regulatory authorities granted the first license for an installation on Bedouin-owned land belonging to the Tarabin tribe. Financing for the Bedouin fields is coming from the United States government’s Overseas Private Investment Corporation.

Arava Power expects to grow into a $2 billion enterprise. That is quite a change for a small kibbutz that has mainly lived off its date palms, dairy shed and the salaries of members who work outside the farm.

Ketura was founded in 1973 by 25 idealists, graduates of the Young Judea Zionist movement, and is known for its socialist values and simple, communal lifestyle. Though the kibbutz has a stake in Arava Power, Mr. Hofland, the company chairman, will not make any personal profit.

The kibbutz is also known for environmental innovation. It operates a high-tech algae farm and is home to the Arava Institute, where Israelis, Palestinians, Jordanians, Americans and others study the environment. The kibbutz’s appreciation for education has resulted in what its secretary general, Sara Cohen, calls “knowledge-based ventures.”

In one such effort, Dr. Solowey domesticates rare plants, including species with medicinal properties, and works on finding new crops for arid and saline lands.

As yet, the prospect of solar power riches has not gone to the heads of the practical farmers

who live in Ketura.

"It means having our future accounted for, when we cannot work in the date fields anymore," Ms. Cohen said. "And our children's education will be secured."

Still, she added, "We are not eating filet mignon in the kibbutz dining room yet."

Israeli Startup SDE Produces Low-Cost Electricity From Waves

Did you ever look at the sea and found yourself in awe of the power of waves? That is what happened to Israeli engineer Shmuel Ovadia, 30 years ago. Ovadia was at the beach waiting for friends, suddenly humbled by the vast sea and its powerful waves crashing into the shore.

This sight is what he credits for the idea to use the energy of the sea for human benefit. Today he is the CEO of SDE Energy, an Israeli cleantech company that develops technologies to produce electricity from sea waves.

SDE's method uses sea wave motion to generate hydraulic pressure, which is then transformed into electricity. The system takes advantage of the wave's speed, height, depth, rise and fall – and the flow beneath the approaching wave to produce energy.

Taking advantage of the waves

The company was recently ranked by the New Energy Congress - a team of international scientists – as the world's number one developer of Sea Wave Energy Technologies, number six in Tidal Energy and River Energy, and one of the Top 100 cleantech companies in the world.

A full-scale model of the patented technologies was operated in Jaffa Port, Israel, in 2010 and produced 40ekW (Electrical Kilowatts) for almost one year. According to SDE, the model has been tested and approved by experienced engineers.

The research conducted in Israel showed that the technology can produce electricity at a cost of $2 cents per KWH. According to the company, the cost is significantly lower compared to other renewable energy technologies such as wind energy – 12 cents – and solar energy – 16 cents per KWH.

Ovadia says he is hoping that this model will lead to significant reductions in electricity costs in areas where it will be operated.

Facing competition

Due to the high oil prices and the rising costs of electricity, Ovadia and his partners were looking for an alternative for renewable energy production. Although they are far from being the only players in this market, SDE claims to have a few advantages over other companies that produce electricity from sea waves. Due to the lack of shore areas available for commercial use, SDE developed a system that requires minimal use of land.

According to Ovadia, SDE's technology "utilizes the waves' ascent and descent, the entering and retreating wave, the upper and lower wave, while most of SDE's competitors' technologies utilize only the upper wave."

The company says it currently holds several letters of intent and orders from states and electric companies in Chile, Mexico, Zanzibar and Kenya, for approximately $1 billion. The company has also deployed a system in China, financed by the Chinese government.

Suntech eyes Israel as country shifts more clearly to Solar

The Middle East is being eyed for a solar revolution by the Chinese owner of more than 40% of Israel's solar photovaltaic panels in a new twist on the energy sector's international roots.

Currently the largest producer of solar panels in the world, China-based Suntech has long been eyeing the oil-rich Middle Eastern market as a critical region for energy transformation. As oil prices skyrocket, many Middle

Eastern countries are opting to sell their oil and produce electricity from other sources - including solar - for domestic use.

But the Israeli market has been a unique business opportunity for Suntech because of the plethora of high-tech and IT companies in the country's "Silicon Wadi" that are innovating unique solar solutions.

Suntech signed a 10 million NIS (approximately $2.7 million) contract in January with Israel's Tel Aviv-based Enerpoint for the company's SuperPoly solar system that improves panel operating efficiency in extremely hot and sunny climates like Israel and the Middle East. The companies say that contract, which was signed for the first quarter of 2012, could be extended for the remainder of the year.

And while Suntech has done most of its business in Israel through large local solar companies like Arava Power in the south and Solarit Doral in the north, Suntech Communications Supervisor for the Asia Pacific, Middle Eastand Africa (APMEA) regions Ryan Ulrich told AOL Energy that Israel has proved a very comfortable place for the company to do business.

"In Israel things are much more open: access to relevant decision makers, access to the media is much easier than in other markets," Ulrich said.

A Holy Land history

Ulrich said Israel has been a key market for Suntech since 2008 when the company joined with Solarit Doral to build a 50 kW rooftop solar installation in Katzrin, located in Israel's Golan Heights mountain range. Since then, Suntech provided the panels to Arava Power for Israel's first utility-scale solar project, a 4.95 MW solar array in Kibbutz Ketura.
But Israel has been slow in implementing government policies that encourage domestic solar PV power. In June 2008, the Israeli Public Utility Authority approved solar feed-in-tariffs that were limited to relatively small-scale installations of 50 MW over 7 years, whichever target was reached first, with a maximum of 15 kWp installation for residential and a maximum of 50 kWp for commercial solar.

Although in December 2009 the National Infrastructures Ministry expanded the feed-in tariff to include medium-sized solar-power stations ranging from 50 kW to 5 MW, the only project to be approved till this February was Arava's 4.95 MW installation. Even that project faced months of bureaucratic battles.

More licenses are on the horizon as Israel tries to meet its 2020 10% renewable energy goal

Yet, despite the slow start, Israel has begun to embrace PV technology over the last few months. This February, Arava successfully procured a provisional license for a 40 MW solar PV installation in Kibbutz Koura and the government also approved two solar thermal plants: a 120 MW thermal solar plant that will be built outside Kibbutz Zeeland and a 60 MW thermal solar plant to be constructed outside Kibbutz Mashie Sadeh, both estimated to be operational by 2014.
When the two recent thermal plants were approved this February, Israel's Ministry of Energy and Water Resources also issued 19 licenses for medium-sized solar PV projects that will provide a total of 27 MW of power.
And this March, the government approved nine licenses for utility-scale solar PV fields that will provide a total of 385 MW of solar power to the country's grid, along with 50 small-scale PV licenses that will generate a total of 116 MW. In announcing the flurry of licenses, the Public Utility Authority noted that more licenses are on the horizon as the country tries to meet its 2020 10% renewable energy goal.

Natural Gas as the Expensive Option

The sudden interested in solar energy may also be due to popular pressure: Israeli electricity prices are set to rise nearly 9% because of volatile natural gas prices and increased demand.

But Israel also lags behind other industrialized

countries in implementing clean energy. Even though Israel implemented laws in the 1950's and 1960's that encouraged rooftop solar water heaters, the country continues to use mostly fossil fuel for electricity generation and its 2020 renewable energy of 10% is relatively low compared to other countries.

Meanwhile companies like Suntech have been standing by for years and waiting for consistent policy to bring them business.

"Sometimes it can be a challenge, but overall we really favor policies that encourage stable growth of the market.

Tariffs should take into account the market as well," Ulrich said. "We work as much as we can to encourage good government policies."

Policies for financing renewable energy have been a source of contention around the world. Read more here.

As the slow shift sets in, Suntech has been exploring options of bringing solar energy to Israel in smaller off-the-grid installations. Hybrid-in-a-box is the company's latest ideas: a solar system connected to a back-up diesel generator that can produce consistent power around the clock. Suntech is hoping to bring the box to Bedouin tribes that might not be grid-connected and that are using only diesel for power generation.

But with the price of solar PV continuing to drop, Ulrich said Suntech is hopeful that business will pick up soon in the Israeli market.

"Israel has a lot of promise," he said. "Price was always an issue but now that the price has come down, grid parity has nearly arrived, it is just a matter of time before there are more utility-scale projects."

Covidien buys hernia mesh company PolyTouch for $30-40m

This is the third acquisition of an Israeli medical device company announced by Covidien over the past two months.

Global medical devices giant Covidien plc (NYSE: COV) has acquired PolyTouch Medical Ltd., which develops hernia mesh placement technologies.

The acquisition took place in 2011 but is only being reported now and opened a wave of acquisitions of Israeli companies by Covidien. Over the past two months Covidien has acquired pulmonary endoscope developer superDimension for $300 million and capnography respiratory monitors and modules manufacturer Oridion Systems Ltd. (SWX: ORIDN) for $346 million.

Market sources believe that the PolyTouch acquisition was for $30-40 million. Only $1.3 million has been invested in the company, which was only founded in March 2009 by Ofek Levin, Arik Levy and Lena Levin, the winners of BizTEC07 Israel national entrepreneurship competition.

Investors will receive a 23-fold return. The leading investors are Trendlines International Ltd., which founded the company within the Misgav Venture Accelerator, an incubator supported by the Chief Scientist, and Mass Medical Angels, a group of private Israeli and US investors.

PolyTouch has developed a device for the precise and rapid deployment and placement of mesh during laparoscopic soft tissue repair procedures. PatchAssist the leading product, was further developed to become AccuMesh, an innovative endomechanical device facilitating insertion, deployment and placement of mesh during laparoscopic ventral hernia repair. Covidien launched the AccuMesh device earlier this year.

PolyTouch CEO Levin said, "We are thrilled to have found a partner in Covidien for PatchAssist. The rapid development of our technological platform and our success in gaining FDA clearance for this important product has resulted in this transaction."

PolyTouch chairman William Edelman said, "The ability of innovative medical device companies such as PolyTouch to rapidly focus on technologies and products of high clinical need is an important driver of value creation for the clinical community as well as medical device investors. The PolyTouch model of focused investment and dedicated management execution has resulted in this vote of

confidence by Covidien, one of the world-premier medical device leaders."
PolyTouch was advised by Morgan Keegan & Company, Inc., now part of Raymond James & Associates, Inc.

A 'faster-ticking clock' indicates the early solar system
may have evolved faster than we think Our solar system is four and a half billion years old, but
its formation may have occurred over a shorter period of time than we previously thought, says an international team of researchers from the Hebrew University of Jerusalem and universities and laboratories in the US and Japan..

Establishing chronologies of past events or determining ages of objects require having clocks that tick at different paces, according to how far back one looks. Nuclear clocks, used for dating, are based on the rate of decay of an atomic nucleus expressed by a half-life, the time it takes for half of a number of nuclei to decay, a property of each nuclear species. Radiocarbon dating for example, invented in Chicago in the late 1940s and refined ever since, can date artifacts back to prehistoric times because the half-life of radiocarbon (carbon-14) is a few thousand years. The evaluation of ages of the history of earth or of the solar system requires extremely "slow-paced" chronometers consisting of nuclear clocks with much longer half-lives.

The activity of one of these clocks, known as nucleus samarium-146 (146Sm), was examined by Michael Paul, the Kalman and Malke Cooper Professor of Nuclear Physics at the Hebrew University of Jerusalem, as well as researchers from the University of Notre Dame and the Argonne National Laboratory in the US and from two Japanese universities.
146Sm belongs to a family of nuclear species which were "live" in our sun and its solar system when they were born. Events thereafter, and within a few hundred million years, are dated by the amount of 146Sm that was left in various mineral archives until its eventual "extinction."

146Sm has become the main tool for establishing the time evolution of the solar system over its first few hundred million years. This by itself owes to a delicate geochemical property of the element samarium, a rare element in nature. It is a sensitive probe for the separation, or differentiation, of the silicate portion of earth and of other planetary bodies.
The main result of the work of the international scientists, detailed in a recent article in the journal Science, is a new determination of the half-life of 146Sm, previously adopted as 103 million years, to a much shorter value of 68 million years. The shorter half-life value, like a clock ticking faster, has the effect of shrinking the assessed chronology of events in the early solar system and in planetary differentiation into a shorter time span.
The new time scale, interestingly, is now consistent with a recent and precise dating made on a lunar rock and is in better agreement with the dating obtained with other chronometers.
The measurement of the half-life of 146Sm, performed over several years by the collaborators, involved the use of the ATLAS particle accelerator at Argonne National Laboratory in Illinois.

Medical miracle at the Wolfson Medical Center in Holon

Doctors were able to save the life of a 14 year old girl from Angola after they took out from her chest a 14 cm Tumor that pressed her heart and threatened her life. The tumor weighs half a kilo and it pushed her heart to the side, under her arm. Only a few similar cases are known in the whole world.
Elisa Manuel Antonio was first diagnosed during the Save a Child's Heart (SACH) medical mission In Angola last October. Senior cardiologist Dr. Alona Raucher, who saw such a huge tumor for the first time in her career, examined Elisa. "I was shocked when I first saw her", says Dr. Raucher, "and immediately understood we need to bring her to Israel to try and save her life". Elisa was brought to Israel by SACH. On March 19, 2012, after hours of complicated surgery, the SACH team managed to take out the tumor from Elisa's chest and saved her life. Elisa is now recovering at the Wolfson Medical Center. She will stay in

Israel another month and once the doctors are sure she is well enough, she will return home to Angola. The SACH medical team will continue and follow up on Elisa's condition through the local cardiologist in Luanda and will examine her once a year when going to Angola on a medical mission.

Covidien to buy Israeli company for $300 million

Covidien said Monday it was buying superDimension Ltd., an Israeli company that makes a bronchoscope with GPS-like tracking technology, for about $300 million.
The deal, which also includes future payouts based on performance, is expected to wrap up in the second quarter.
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superDimension makes the i-Logic Electromagnetic Bronchoscopy system, a bronchoscope that uses electromagnetic navigation technology to be tracked as it snakes through the lungs. Once in the lungs, the device can take images or biopsy samples, place markers for radiation therapy or surgery, and even deliver treatments, according to a superDimension's brochure. The device is meant to help doctors find small lesions in the deep lungs without resorting to surgery, the company said.
Health care investment bank Leerink Swann dubbed the buy a "small add-on" that was "positive longer-term."
"Though unlikely to move the needle on COV in the short term, longer term this transaction could add a differentiated platform in a growing market (lung biopsies) that is leverageable through COV's extensive global sales & marketing infrastructure," Rick Wise, an analyst with the group, told investors in an e-mail note.
Covidien said the purchase would be "slightly dilutive" to fiscal 2012 earnings per share, but that this would be mostly offset by the "underlying strength" of existing businesses.
Once the acquisition is complete, Covidien said superDimension would be enfolded in the endomechnical line of the company's medical device division.
SuperDimension, which Covidien says has annual sales of about $30 million, is based in Herzliya, Israel.

Yozma sells 3% of Conduit for $39m
The website toolbar developer's value of $1.3 billion equals that of Israel's largest companies.

Website toolbar developer Yozma Venture Capital has sold 3% of Conduit Ltd. to W Capital Partners for $39 million. The sale comes a month after Yozma unsuccessfully sought to sell 9% of the company to Silver Lake.
The company value of $1.3 billion for Conduit equals that of Israel's largest companies, including public companies. Ofer Holdings Group unit Ofer Hi Tech Ltd., which owns 30-40% of Yozma, will be the biggest profiteer from the sale. Yozma will probably sell its remaining 6% of Conduit later.
Yozma acquired 9% of Conduit for $1.5 million in 2006. The $50 million Yozma III Fund, raised in 2001, has reached its termination, and is trying to sell its holdings.
Notice of the sale was included in an internal letter from Conduit chairman and CEO Ronen Shilo to employees, in which he said that they had an opportunity to sell their shares in the company to W Capital Partners. The company has no plans for an IPO anytime soon, or for a sale of the company. Shilo's offer gives employees whose options for shares have matured to benefit from the company's performance.
Last year, Conduit distributed a NIS 200 million dividend to shareholders and many employees. Ronen, CTO Dror Erez, and COO Gaby Bilczyk founded the company in 2005.
The company has been trying to change its strategy, and rebranded to provide solutions for tightening the connection between content vendors and users.

IAI unveils Rex infantry robot
Rex is designed as the robotic replacement of the llamas that accompanied IDF troops during the 2006 Second Lebanon War.

Israel Aerospace Industries Ltd. (IAI) (TASE:

ARSP.B1) today unveiled at the Association for Unmanned Vehicle Systems International (AUVSI) conference in Tel Aviv a device that could be the infantryman's best friend. Meet Rex - a robot that follows infantrymen on the march, responds to commands given by remote control, carries equipment, food, and munitions, and can extricate wounded soldiers from the field.

Rex is designed as the robotic replacement of the llamas that accompanied IDF troops during the 2006 Second Lebanon War. In contrast to the llamas, Rex is not supposed to panic under fire, and there is no need to feed and water it on the battlefield.

IAI military robotics program head Paz Meidan said, "The llamas should be praised. They provided a creative solution to the problem of soldiers carrying huge quantities of personal equipment over long distances. Whereas in World War II, an infantryman crossing the Normandy beaches carried an average of 15 kilograms of equipment, the average infantryman now carries almost triple that load."

Rex weighs 200 kilograms, and can carry up to 250 kilograms of equipment, which can be loaded and unloaded quickly. It has a 170-cubic centimeter gasoline engine, and can travel at up to 15 km/h, to move at the speed of infantrymen in field conditions.

"This was a huge challenge for us," says Meidan. "To make it possible for the vehicle to know to move so slowly, we had to invest in our own development, because all developments in the field to date were directed towards faster speeds to get from one point to another as fast as possible."

Rex operates well in the field

Meidan's team defined a series of demands for a vehicle that was designed to accompany infantrymen. It had to be long enough to carry a stretcher for evacuating one wounded soldier, narrow enough to go through a standard door or move down a narrow alley, low enough to be carried by a Blackhawk helicopter, and be able move and function well in difficult terrain.

IAI's engineers solved Rex's problem to get over obstacles by making it easy to unload by two or three soldiers, who can then lift it over the obstacle.

"One infantryman will use a remote, which is half the size of a smartphone, to drive Rex. The remote has five buttons: speed; GPS sensors to set the distance to keep from the unit from three to 100 meters; and an optical monitor installed on Rex. "These systems enable Rex to follow the leader," says Meidan.

Robot, spruce up your appearance!

In addition to being the ultimate porter to carry rockets, grenades, and rations for IDF Golani Brigade infantrymen in the next war, IAI is already thinking about other applications for Rex. The same platform can be used to carry state-of-the-art systems for real-time intelligence gathering and analysis for troops operating in the field; or one Rex can be defined as a mobile generator to recharge batteries and electronics used by the troops, such as unmanned aerial vehicle (UAV) command and control systems.

Meidan says that a scenario in which one soldier is made responsible for several robots and their various functions is reasonable.

Just $115 million in private equity deals in Q1 2012

The following are the findings of the IVC-GKH Quarterly Private Equity (PE) Survey conducted by IVC Research Center, which for more than 15 years has been at the forefront of private equity, high-tech, start-ups and venture capital research in Israel. The Survey is sponsored by Gross, Kleinhendler, Hodak, Halevy, Greenberg & Co. (GKH), a leading Israeli corporate law firm specializing in M&A, joint ventures, venture capital, equity and debt financing. The Survey reviews Israeli private equity deals involving Israeli and foreign PE funds and other investors - both Israeli and foreign. The current Survey is based on the activity of 70 private equity funds of which 30 are Israeli and 40 are foreign.

Q1 2012 was the weakest quarterly period for

Israeli private equity deals in two years with only eight private equity deals, compared to a quarterly average of 16 deals in 2011. Total deal value was only $115 million, 91 percent below the $1.21 billion (16 deals) of Q4 2011 and 83 percent below the $670 million (17 deals) of Q1 2011 (Figure 1). Two large deals, each above $20 million, accounted for $85 million or 74 percent of the total amount. The average deal in Q1 2012 was $14 million, compared to $76 million and $39 million in Q4 and Q1 2011, respectively.
In Q1 2012 private equity deals valued at over $50 million accounted for 12 percent of the total number of deals, compared to 25 percent in Q4 2011 and 29 percent in Q1 2011. Deals valued at $20-50 million accounted for 12 percent as well, compared to 19 and 6 percent in Q4 and Q1 2011, respectively. Deals valued at under $20 million accounted for the remaining 76 percent, compared with 56 percent in Q4 2011 and 65 percent in the year-earlier period.

In Q1 2012, Israeli private equity funds accounted for 23 percent of total private equity activity with $27 million invested, compared to 22 percent in Q4 2011 and 28 percent in Q1 2011. The largest Israeli private equity fund deal was a $14 million straight equity investment by Manof Origo in REIT 1, a real estate investment company. The transaction accounted for 52 percent of Israeli PE fund activity.

Rick Mann, Managing Partner of GKH, explained: “We are experiencing a slowdown in the pace of private equity activity, although we are still seeing interest by private equity funds. Private equity funds appear to be adopting a more cautious approach, one that takes longer to reach fruition. We are not yet seeing significant private equity transactions driven by the recommendations of the Committee on Concentration in the Economy. Yet, we do expect private equity investment opportunities to develop if the recommendations are adopted in their current form.”
Marianna Shapira, Research Manager at IVC, observed, “The Israeli private equity market is known to be volatile. As we have seen in the past, a few large deals usually account for the lion’s share of transactions. However, atypically, in this year’s first quarter, no large deals were made. We do expect the market to demonstrate greater activity as the year progresses reflecting new deals that are in the works.”

Israeli private equity deals by sector
In Q1 2012, Internet transactions (for the first time in two years) accounted for the largest share - 45 percent - of total deal value. This distinction mostly reflected the $52 million buyout of Conduit, an Internet applications company, by foreign private equity investor W Capital Partners. The financial sector followed with 29 percent of deal value and the real estate sector accounted for 12 percent, based on Manof Origo’s investment in REIT 1, cited above. The three sectors accounted for 86 percent of total deal value in the quarter.
Israeli private equity deals by type
This survey reviewed the following types of private equity financing deals: straight equity, buyouts, mezzanine, distressed debt and turnaround/distressed equity.

In Q1 2012, four buyouts accounted for $90 million or 78 percent of aggregate deal value. This compares to six buyout deals that attracted $950 million (78 percent) in Q4 2011 and five deals valued at $326 million (49 percent) in the year-earlier period. Two straight equity deals followed with $15 million or 13 percent of total deal value in Q1 2012, while two mezzanine deals accounted for the remaining nine percent of total deal value in the quarter.

Apple takes bigger bite into Israel

Apple‘s new development center in Haifa is looking for hi-tech engineers and joins Intel and Microsoft by expanding in Israel.

Apple‘s new development center in Haifa is looking for hi-tech engineers as the huge tablet maker joins Intel, Microsoft and General Electric in expanding its operations in Israel.
The recent recruiting follows by one month Apple’s advertisements for workers for Anobit, an Israeli flash memory start-up that Apple

Venture Capital

bought out in January for a reported $400 million to $500 million.
Anobit's flash memory controllers "are a key component of all Apple's leading products," reported TechCrunch, which added that the purchase "in one fell swoop…added a large team of chip engineers to payroll…. Roughly 160 of Anobit's 200 employees are also engineers, thus they instantly represent more than 10 percent of the total number of chip engineers at Apple."

Anobit makes a key component that improves the performance of NAND flash memory chips, which are used in iPhones, iPads, and iPods, and the new subsidiary of Apple provides flash storage solutions for enterprise and mobile markets."

Apple's in-house chips make it less dependent on outside suppliers while allowing it to build its own engineering team for the "post-PC" era.

Recently Apple offered its new iPad for sale in Israel and eight other countries, bringing to 57 the number of countries where it is being sold.

Apple's third generation tablet includes a new Retina display, a new A5X chip with quad-core graphics an advanced optics.d a 5 megapixel iSight camera.

EMC buys XtremIO for $430m
The storage systems company is EMC's sixth acquisition in Israel.

EMC Corporation (NYSE: EMC) has acquired storage systems company XtremIO for $430 million. EMC confirmed the acquisition on Thursday with a brief statement saying, "XtremIO's all-Flash, scale-out, enterprise storage architecture was designed to leverage Flash memory. XtremIO technology will complement the range of EMC Flash-based systems and software stemming from EMC's early entry into the Flash storage market. The all-cash transaction is not expected to have a material impact to EMC GAAP or non-GAAP EPS for the full 2012 fiscal year."

"Globes" was the first to report the imminent acquisition several weeks ago.

XtremIO was founded by a group of Israeli high tech veterans including Aryeh Margi, a co-founder of M-Systems; Shuki Bruck, Yaron Segev, and CEO Ehud Rokach, a former senior executive at Orckit and CEO Corrigent.

The exit is an exceptional success for Israel's venture capital industry. The company was founded in 2009 and has raised only $25 million to date in two financing rounds. Founders and employees will also be sharing out a great deal of money. The company has offices in Herzliya and San Jose, California.