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The Authority for Research and Development
The Hebrew University of Jerusalem

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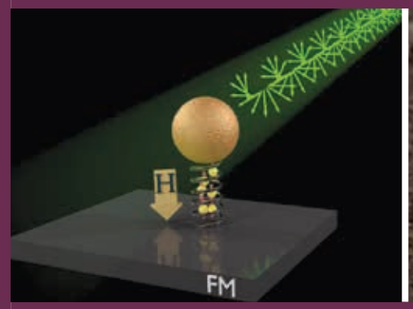
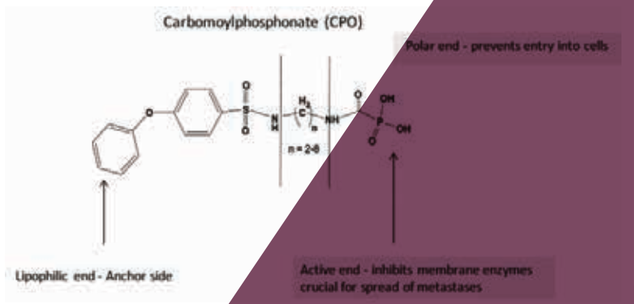
THE HEBREW
UNIVERSITY
OF JERUSALEM

THE KAYE INNOVATION AWARDS

AT THE HEBREW UNIVERSITY OF JERUSALEM



2016 תשע"ו



ISAAC KAYE

Isaac Kaye is a pharmaceutical chemist who has been very successful at translating novel ideas into profit-generating products. He established Norton Healthcare, a substantial generic pharmaceutical company in the UK, which later merged with the IVAX Corporation of the USA. Teva, Israel's biggest company, completed its acquisition of IVAX in 2006, creating the world's largest generics company.

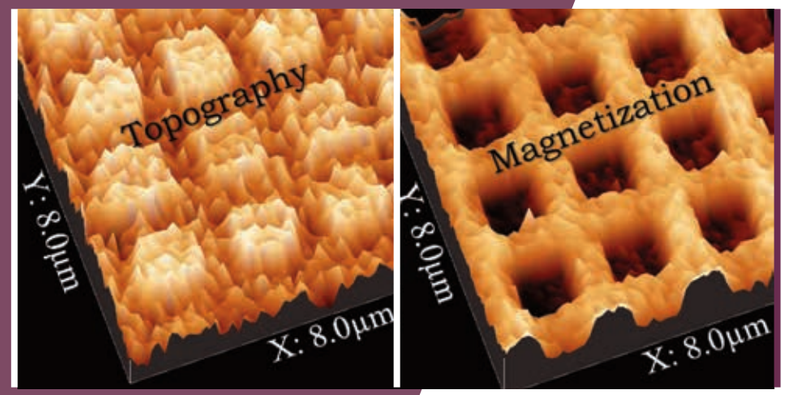
After retiring from IVAX, he turned his attention to venture capital and together with partners founded Israel Healthcare Ventures (IHCV), a provider of capital to early and expansion stage Israeli companies. IHCV focuses exclusively on healthcare and life sciences.

Isaac Kaye's passion for medical innovations that advance human healthcare is matched by a number of other interests, including his love of Israel and its people and his enthusiasm and support for The Hebrew University of Jerusalem and the principles upon which it is based. Fortunately for the Hebrew University, Isaac Kaye's interests in pharmacology, new chemical entities and medical devices are very much in line with areas in which the University has considerable expertise and which it is eager to develop.

In 1995, the Isaac and Myrna Kaye Chair in Immunopharmacology at the School of Pharmacy was established, providing much needed research funds in this field. In 2005, he established five annual fellowships for outstanding graduate and post-doctoral students. "The Kaye-Einstein Fellowships" encourage recipients to continue their studies at the Hebrew University for a minimum of three years, helping to prevent the University's finest scholars from being recruited by other leading institutions. Subsequent to the first program of scholarships, five additional three-year scholarships were awarded in 2010, and another five in 2013 to outstanding students as "Kaye-Einstein Scholarships." Yet another five will commence this year, 2016.

Isaac Kaye established the annual Kaye Innovation Awards in 1993. The awards have earned an esteemed reputation highlighting innovations with potential for income generation, principally through royalties for the University. Applications must be well focused and accompanied by recommendations but unlike grant proposals anyone from the most senior to the most junior staff may apply. Students are always encouraged to submit proposals. The winners demonstrate not only good science but also a focus on commercial viability and the benefits this brings to the University.

Isaac Kaye has always been active on behalf of the Hebrew University. He served as Chairman of the South African Friends organization and became an active member of the University's Board of Governors. Following his move to the UK, Isaac Kaye joined the British Friends and continued as a member of the Board of Governors of the Hebrew University. He is currently Chairman of the British Friends. Our University is deeply indebted to both Isaac and Myrna for their deep involvement and devotion to this institution.



Yissum
Technology Transfer Company of the Hebrew University

For the past 22 years, Yissum has been taking part in the selection process of Hebrew University faculty and students for the prestigious Kaye Awards. These annual awards are given to those inventors whose work exemplifies best the synergy of scientific excellence and commercial potential.

Yissum enjoys a prominent place among the world's leading technology transfer companies, with over two billion dollars in annual sales of products originating at the Hebrew University and licensed by Yissum sold worldwide. Since its inception in 1964, Yissum has registered over 9,300 patents, covering more than 2600 inventions, 830 of which have been licensed and 110 of these formed the basis for the establishment of start-up companies, 14 of which were formed in 2015. Many of the researchers behind these products and technologies have been recognized by receiving the Kaye Award.

This year's first prize is awarded to Prof. Yoel Sasson of the Faculty of Science, for his invention: "Novel reagent for purification of oil-contaminated soil." This environmental-friendly technology is an excellent example of the Hebrew University's ability to take scientific leadership where there is a real market need. In 2013, Yissum licensed the technology to a Swiss-based company which commercialized the technology under the brand name "NHSPlus." The company conducted successful pilot scale tests in oil-contaminated sites in Russia, Switzerland, The Netherlands, and in the Israeli Arava.

The second prize this year is awarded to Dr. Meital Reches of the Faculty of Science for her research: "Biocompatible and environmentally friendly antifouling materials."

In April 2015, Yissum formed a new startup company, NanoAF, to develop and commercialize various applications for this technology, such as: food packaging, medical implants, water purification, and marine biofouling. Today, NanoAF is in the process of establishing strong collaborations with the world's leading chemical companies and leading electronic device manufacturers.

Prof. Reuven Reich, Prof. Eli Breuer and Prof. Amnon Hoffman of the Institute for Drug Research at the Faculty of Medicine's School of Pharmacy will be receiving the Kaye Award for: "Novel carbamoylphosphonate-based compounds for the treatment and prevention of metastatic diseases." These compounds, which are indicated for oral administration, have shown in preclinical studies to be effective also against the "triple negative" breast cancer that is currently resistant to all available therapies.

The newly invented molecules tackle the tumor-immediate microenvironment and therefore are a promising approach to an unmet need to treat metastatic disease. In the beginning of 2016, Yissum licensed the project High Jump Pharma, an Israeli start-up company formed by successful entrepreneurs.

The prize is also awarded to two promising students: Dr. Pini Tsukerman for his research on "New immunotherapy against cancer," and Mr. Oren Ben Dor for his research on "Chiral molecular-based spin devices."

Yissum is proud to be actively involved in the successful commercialization of these and many other technologies. Our dedicated team is committed to bridging the ever-existing gap between academia and industry in order to bring the fruits of first-class academic research to society at large, and thus provide much-needed funding to support scientific research at the Hebrew University.

We are, as always, indebted to Mr. Kaye for his generosity and personal commitment to support Hebrew University's researchers in their constant quest for innovation, and extend our sincere congratulations to this year's eminent prize-winners.

YAACOV MICHLIN
President & CEO

YISSUM

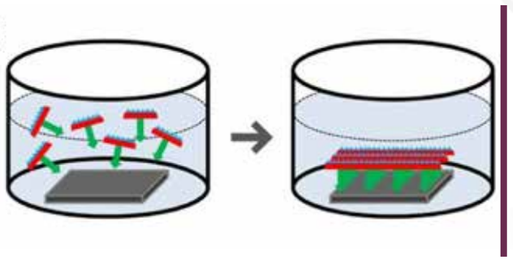
KAYE WINNERS 2016

RESEARCHERS

First Prize

Prof. **YOEL SASSON**
Casali Institute of Applied Chemistry
Institute of Chemistry
Faculty of Science
Novel Reagent for Purification of Oil-Contaminated Soil

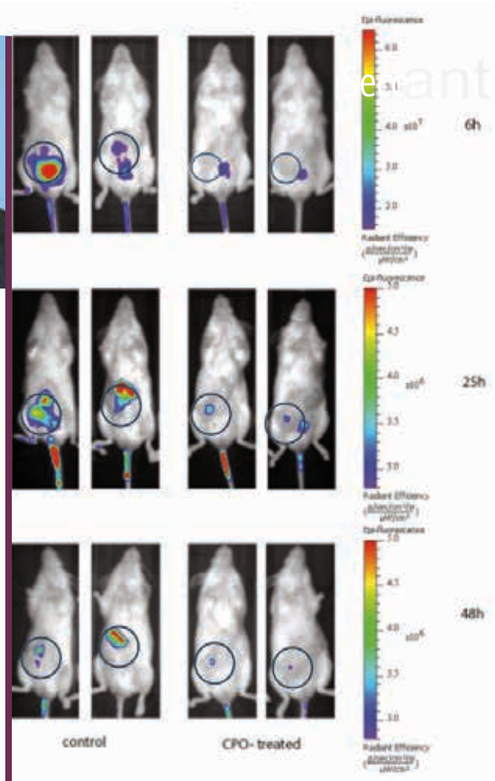
Second Prize



Dr. **MEITAL RECHES**
Institute of Chemistry
Faculty of Science
Biocompatible and Environmentally-Friendly Antifouling Materials

Third Prize

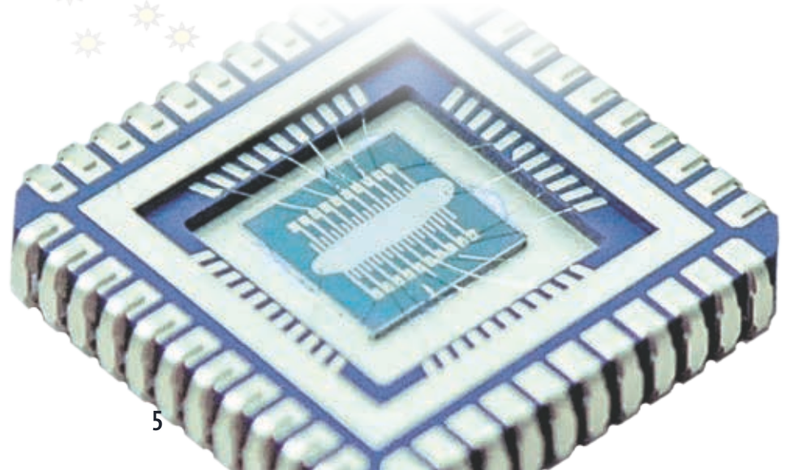
Prof. **REUVEN REICH** Prof. **ELI BREUER** Prof. **AMNON HOFFMAN**
Institute for Drug Research
School of Pharmacy
Faculty of Medicine
Novel Carbamoylphosphonate-Based Compounds for the Treatment and Prevention of Metastatic Diseases



STUDENTS

Dr. **PINCHAS TSUKERMAN**
Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
New Immunotherapy Against Cancer

Mr. **OREN BEN DOR**
Department of Applied Physics
The Rachel and Selim Benin School of Computer Science and Engineering
Faculty of Science
Chiral Molecular-Based Spin Devices



Prof. **YOEL SASSON**
Casali Institute of Applied Chemistry
Institute of Chemistry
Faculty of Science

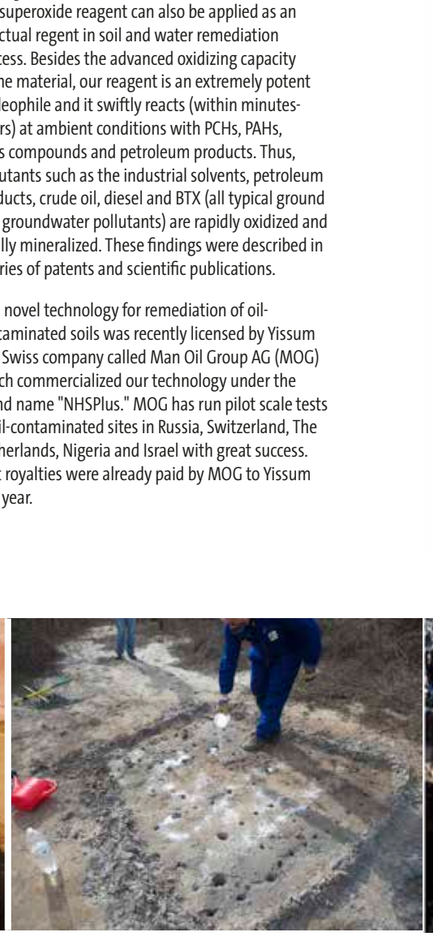
Novel Reagent for Purification of Oil-Contaminated Soil

Oil is the most valuable world resource. Oil production now exceeds 90 million barrels a day. However the storage, processing and transportation of this extremely important product to the world economy carries certain risks. Spills and leaks are common and occur every day around the world and sometimes result in ecological disasters. When crude oil or petroleum products spill they can penetrate deep enough into the soil to destroy microflora and severely impact the stratum on a molecular level, leading to long-term changes to the environment.

We have discovered a novel method for the in-situ generation of a remarkably stable superoxide anion radical under ambient conditions based on mixture of hydrogen peroxide and sodium hydroxide. The superoxide radical anion $O_{2.}$ is a highly reactive oxygen species that possesses both anionic (nucleophilic) and free radical properties. This unique reagent exhibits properties of a super oxidizing agent and thus can be applied as a new AOP (Advanced Oxidation Protocol).

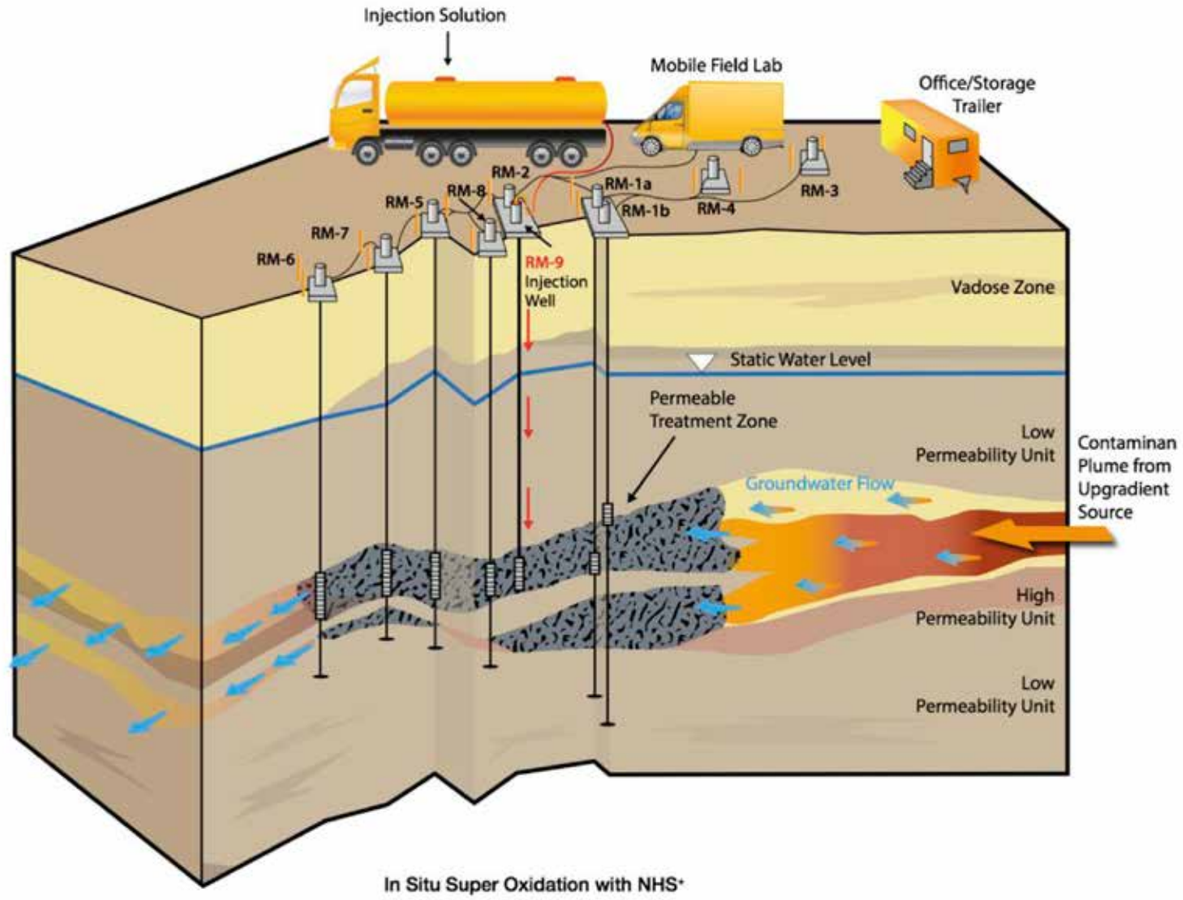
This reagent was effectively utilized for the destruction of bulk of hydrocarbons, carbon tetrachloride and other polyhalogen compounds. Moreover, this reagent was found as a very effective CO_2 absorber, more effective than standard methods for CO_2 abatement. Recently, we discovered that the superoxide reagent can also be applied as an effectual regent in soil and water remediation process. Besides the advanced oxidizing capacity of the material, our reagent is an extremely potent nucleophile and it swiftly reacts (within minutes-hours) at ambient conditions with PCHs, PAHs, PCBs compounds and petroleum products. Thus, pollutants such as the industrial solvents, petroleum products, crude oil, diesel and BTX (all typical ground and groundwater pollutants) are rapidly oxidized and totally mineralized. These findings were described in a series of patents and scientific publications.

This novel technology for remediation of oil-contaminated soils was recently licensed by Yissum to a Swiss company called Man Oil Group AG (MOG) which commercialized our technology under the brand name "NHSPlus." MOG has run pilot scale tests in oil-contaminated sites in Russia, Switzerland, The Netherlands, Nigeria and Israel with great success. First royalties were already paid by MOG to Yissum this year.



Prof. Yoel Sasson, the Lester Aronberg Chair in Applied Chemistry, completed his Ph.D. at the Hebrew University in 1973 summa cum laude. He joined the faculty in 1976, and has been a full professor since 1988, emeritus as of March 2015.

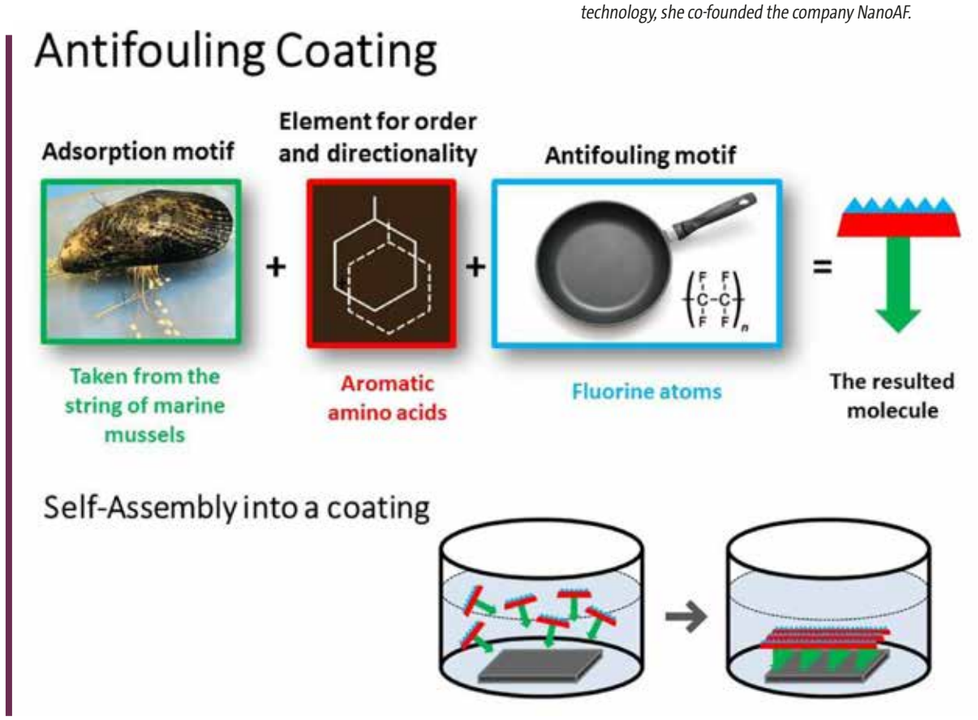
He served as a visiting scientist and visiting professor at the University of Waterloo, Virginia Polytechnic Institute, the University of Paris Sud, the National University of Singapore, Nanyang Technological University and at the Experimental Station of Du-Pont. For 12 years (1994-2005) he held the post of VP of R&D at Makhteshim Chemical Works in Beer Sheva, Israel. He served as the head of the Institute of Chemistry at the Hebrew University from 2010 to2013.
Prof. Sasson is active in the area of green chemistry and environmental and process catalysis. He has published 250 articles and reviews and 45 patents, and has supervised 140 Ph.D. and M.Sc. students in Applied Chemistry.



In Situ Super Oxidation with NHS+

Dr. **MEITAL RECHES**
Institute of Chemistry
Faculty of Science

Meital Reches has been a faculty member of the Institute of Chemistry at The Hebrew University of Jerusalem since 2010. She received her Ph.D. (with distinction) in 2007 from the Department of Molecular Microbiology and Biotechnology at Tel Aviv University. In 2007-2010, she was an EMBO and a HFSP postdoctoral research fellow at the Chemistry Department of Harvard University. Her research focuses on understanding the interface between proteins and inorganic materials. One of the outcomes of this research is an antifouling coating, which prevents the attachment of organisms such as bacteria, fungi and yeast to surfaces. Based on this technology, she co-founded the company NanoAF.



Biocompatible and Environmentally-Friendly Antifouling Materials

Biofouling is a process in which organisms and their by-products encrust a surface. The process initiates with the non-specific adsorption of proteins to the surface, and continues with the attachment of the organisms to the proteins on a substrate. When the organism is pathogenic bacteria, its attachment to the surface may progress to the formation of a well-organized bacterial network called biofilm. The formation of biofilm on medical devices can lead to hospital-acquired infections, a major problem today in the health-care system. In the US, hospital-acquired infections account for approximately 1.7 million infections and 100,000 deaths annually. In the case of marine microorganisms, biofouling of marine devices limits their performance, as it alters fluid flow rates, accelerates mechanical degradation of materials comprising pipes, seals, and nuclear waste vessels, and ultimately compromises water quality.

Biofouling is formed in any humid or wet environment and therefore the problem of fouling has impact on many areas of our lives, including food packaging, water purification systems, air conditioners and other home appliances. Many antifouling solutions have been proposed, but each solution has its own drawback. Some of the solutions are toxic or do not meet regulation standards; some cannot be applied to certain surfaces; some are not effective; and some are just too expensive. The industry is desperately seeking new antifouling solutions.

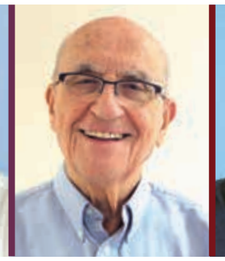
The present innovation is a short peptide (only three amino acids) that can spontaneously form coating or capsules that prevent biofouling. The advantages of using peptides for this purpose lie in their biocompatibility, chemical diversity, and ease for large-scale synthesis. The tripeptide comprises three elements that enable i) its self-assembly into a film, ii) its adsorption onto any substrate, and iii) its antifouling activity. The coating is spontaneously formed on any surface (oxides, metals and polymers). In addition, it prevents the first step of antifouling, which involves the adsorption of bioorganic molecules to the substrate. The coating significantly reduces the attachment of various organisms to surfaces, including pathogenic bacteria, yeasts and fungi.

Prof. Reuven Reich is Dame Susan Garth Professor of Cancer Research at the Institute for Drug Research (IDR), School of Pharmacy. He received his B.Sc. from Bar-Ilan University in 1979, M.Sc. (1982) and Ph.D. degree (1986) from the Weizmann Institute of Science. He did his postdoctoral training at NIDR, NIH, specializing in tumor biology, especially in metastasis formation.

Prof. Eli Breuer, Hans J. and Tilly Weil Professor Emeritus of Medicinal Chemistry, served as head of the Department of Pharmaceutical Chemistry, and Director of the School of Pharmacy, 1988-1994. He was Chairman of the XIIIth International Conference on Phosphorus Chemistry, held in Jerusalem, and has served as member of other scientific boards.

Prof. Amnon Hoffman is a professor of bio-pharmacy and head of Clinical Pharmacy at IDR, School of Pharmacy. He received his B.Pharm. in 1977, M.Sc., 1979, and Ph.D. in 1985 from the Hebrew University. His postdoctoral training in biopharmaceutics was at SUNY Buffalo. He investigates the biopharmaceutical aspects of drug delivery systems and drug development.

Prof. **REUVEN REICH**
Institute for Drug Research
School of Pharmacy
Faculty of Medicine



Prof. **ELI BREUER**
Institute for Drug Research
School of Pharmacy
Faculty of Medicine

Prof. **AMNON HOFFMAN**
Institute for Drug Research
School of Pharmacy
Faculty of Medicine

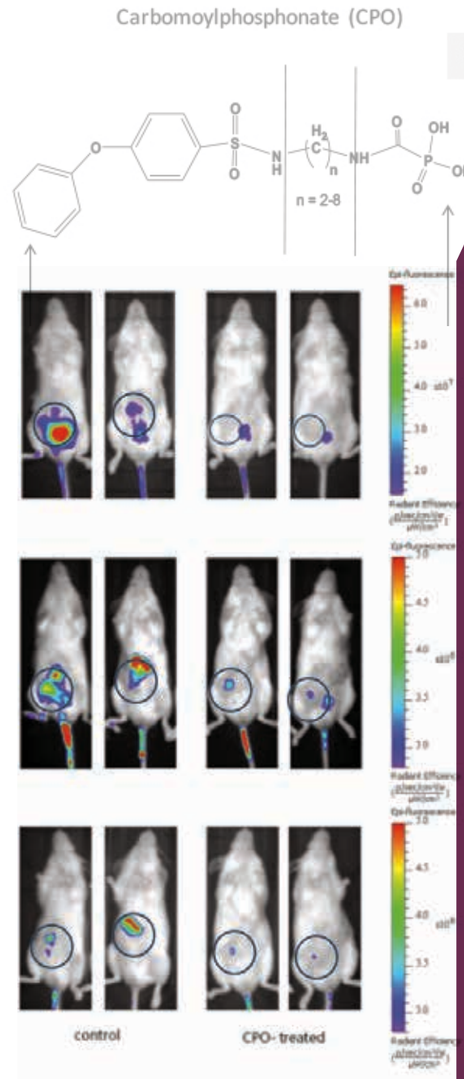
Novel Carbamoylphosphonate-Based Compounds for the Treatment and Prevention of Metastatic Diseases

This invention describes novel carbamoyl-phosphonate based compounds for the treatment and prevention of metastatic diseases. These compounds have shown to be effective in preclinical studies also against the "triple negative" breast cancer that is currently resistant to all available therapies. These compounds are indicated for oral administration, and exhibit long biologic half-life that is most desired for preventative treatment even in the case of relatively poor patient compliance. Unlike current treatments that are based on toxic chemotherapy, these innovative compounds are not cytotoxic at all. In fact their advantage is that they do not penetrate into cells and their site of action is in the extracellular compartment. Thus, the newly invented molecules tackle the tumor-immediate microenvironment and are a promising approach to an unmet need to treat metastatic disease.

Recent evidence indicates that the microenvironment provides essential cues to the maintenance of cancer stem cells/cancer initiating cells and in promoting the seeding of cancer cells at metastatic sites. Numerous molecules are induced or upregulated in the tumor microenvironment which are otherwise characterized by a restricted expression pattern in normal differentiated tissues. Thus, the dynamic and reciprocal interactions between tumor cells and cells of the tumor microenvironment orchestrate events critical to tumor evolution toward metastasis, and many cellular and molecular elements of the microenvironment are emerging as attractive targets for therapeutic strategies.

This invention provides a non-toxic multi-targeted approach, in which mainly tumor metastasis-supporting enzymes would be simultaneously inhibited in the tumor microenvironment (TME) to prevent the proliferation and dissemination of tumor metastases. The enzymes that are mainly considered in this connection are matrix metalloproteinases (MMPs), carbonic anhydrases (CAs) and autotaxin (ATX), all present in the extracellular compartment in vicinity of the tumor cells.

The three enzyme families (ATX, CA IX and XII and MMP 2) have significant differences in their substrates and their products, but share structural similarities in the fact that they all have zinc ions at their catalytic sites and furthermore, they function in the extracellular medium. In light of this, our invented CPOs, which exhibit a triple inhibiting effect on these enzymes, display anti-cancer and anti-metastatic activities.

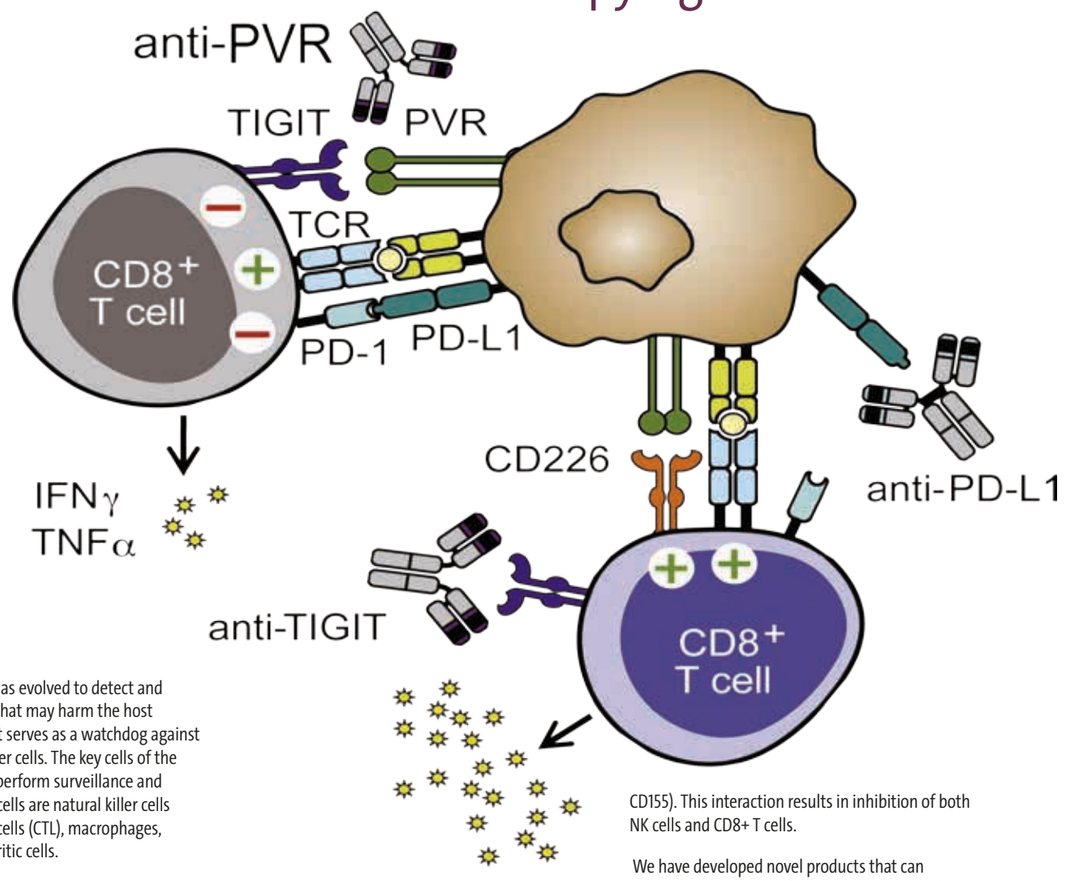


Dr. **PINCHAS TSUKERMAN**
Department of Immunology and
Cancer Research
Institute for Medical Research
Israel-Canada (IMRIC)
Faculty of Medicine

Pinchas Tsukerman was born in the USSR in 1980. In 1990, his family made Aliyah, moving to Jerusalem. He completed high-school studies at Chorev Yeshiva, and then did his military service in the "Egoz" unit. He completed his B.Sc in Biotechnology at Hadassah Academic College (Summa cum laude). During the last year of his studies, he worked on his final-year project in the lab of Prof. Ofer Mandelboim. Following graduation, he enrolled in the direct Ph.D. program, studying in Prof. Mandelboim's lab. His research focused on the interaction between a subset of immune cells termed Natural Killer cells (NK) and tumor cells.

In his first year at Hebrew University, he was awarded the Rector's Award for excellent students. He has already published five papers and was awarded the Bester Award and the IMRIC award for excellence in cancer research.

New Immunotherapy Against Cancer



The immune system has evolved to detect and eliminate pathogens that may harm the host organism. Moreover, it serves as a watchdog against transformed and cancer cells. The key cells of the immune system that perform surveillance and elimination of tumor cells are natural killer cells (NK cells), cytotoxic T cells (CTL), macrophages, neutrophils and dendritic cells.

A major goal of cancer immunotherapy is to generate, induce or augment an anti-tumor immune response, e.g., by vaccination with cancer cells fused with antigen presenting cells (APCs), and by transfer or specific activation of anti-tumor T and NK cells.

NK cell activity is controlled by a balance of signals delivered by inhibitory and activating NK cell receptors. There are several activating NK cell receptors that recognize various ligands, including tumor specific ligands. There are various inhibitory receptors on NK cells, including receptors that bind MHCI. NK cells also express additional inhibitory receptors that do not recognize MHC class I, such as CEACAM1, CD300a and TIGIT (T-cell Immunoglobulin and ITIM Domain).

In humans, TIGIT is expressed on all NK cells, as well as on other immune cells, such as T reg, CD8+ T cells and tumor infiltrating lymphocytes. It recognizes a very well defined ligand, poliovirus receptor (PVR, CD155). This interaction results in inhibition of both NK cells and CD8+ T cells.

We have developed novel products that can boost immune activity. Our products are blocking monoclonal antibodies (mAbs) that target and block the inhibitory receptor (anti-TIGIT) and its ligand (anti-PVR). Each of these mAbs is able to induce potent immune responses. Additionally, these mAbs can act synergistically with existing immunotherapies, such as anti-PD1, anti-PD1L and anti-CTLA4. We thus have high hopes for utilizing these novel anti-tumor mAbs to better treat cancer in the future.

Mr. **OREN BEN DOR**
Department of Applied Physics
The Rachel and Selim Benin School of Computer Science and Engineering
Faculty of Science
Supervisor: Prof. Yossi Paltiel

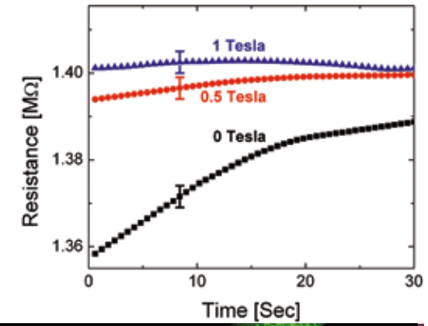
Oren completed his B.A. in Physics at Tel Aviv University, and his M.Sc. at the Hebrew University in 2013. Oren is currently a doctoral student in applied physics under the supervision of Prof. Yossi Paltiel. He has received several scholarships for excellence in scholarship, including an Eshkol scholarship. He has already published two major papers (Nat. Commun. 4, 2256, 2013, and Nano Lett. 14, 6042-6049, 2014) and is a joint holder of two different patents related to his research. He is married and has three beautiful daughters.

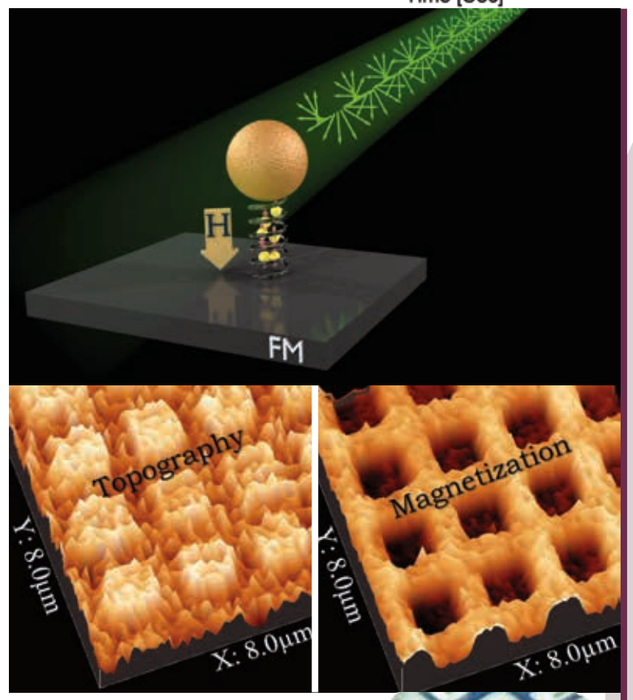
Chiral Molecular-Based Spin Devices

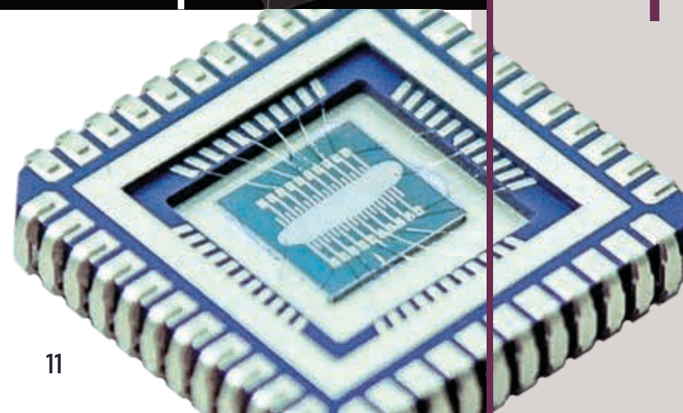
The memory technologies available today offer a variety of methods; all have advantages but invariably suffer from various drawbacks. A high priority in today's information and communication technology is the further miniaturization and decreasing of power consumption. Different approaches are being pursued towards more efficient and further down-scalable techniques; one such approach is the field of spintronics (SPIN TRansport electrONICS).

In contrast to conventional electronic devices, where the electron charge is used for logical operations, data transmission and storage, in Spintronics, the spin – the inner angular momentum of the electron – enables greater freedom. Given that efficient 'spin filters' and 'spin detectors' are available, switching currents might be considerably reduced. Recent spin selective transmission approaches utilize chiral and/or helical molecules. Various types of molecules having chiral or helical structural characteristics function as spin selective filtering elements. Such chiral or helical molecules operate even at room temperature (as well as at increased temperatures) to filter transmission of electrons along the molecule in accordance with direction of internal magnetic moment (spin) of the electrons. The present invention provides a novel electronic device configuration utilizing a spin selective filter, e.g., in the form of chiral or helical molecules, for generating local magnetization in a spin-accumulating layer structure. Furthermore, the electronic device of the invention eliminates the need for a static magnet, which is generally required in magnetic memory units and/or other magnetic based electronic devices. The omission of a permanent magnet, which is generally used for readout of local magnetization/magnetic direction, enables the device of the present invention to be configured in nanometric dimensions. Additionally, manufacturing costs may be reduced as the need for complex multilayer structure that maintains a permanent magnetic field is omitted.

We aim to overcome all known disadvantages while improving current technological advantages. By creating a universal silicon-based memory on chip we believe that a non-volatile, high speed, high density and low power memory device is feasible.







KAYE-EINSTEIN SCHOLARSHIPS 2013-2016

3rd Year Recipients

ROI ASOR
Institute of Chemistry, Ph.D. Candidate
Faculty of Science

REUT AVINUN
Psychology, Ph.D. Candidate
Faculty of Social Sciences

REBECCA BITON
Institute of Archaeology, Ph.D. Candidate
Faculty of Humanities

DAPHNA GROSS-MANOS
Paul Baerwald School of Social Work and Social Welfare, Ph.D. Candidate

ALISA KOMSKY-ELBAZ
Department of Animal Sciences, Ph.D. Candidate
Robert H. Smith Faculty of Agriculture, Food and Environment

KAYE WINNERS

Previous Winners
Kaye Innovation Awards
at The Hebrew University of Jerusalem

Kaye Winners 2015

Inventor:	Prof. **URI BANIN** nstitute of Chemistry and the Harvey M. Krueger Family Center for Nanoscience and Nanotechnology, Faculty of Science
Invention:	Semiconductor Quantum Rods - A Quantum Leap for Displays
Inventor:	Prof. **OFER MANDELBOIM** Department of Immunology and Cancer Research Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention:	Development of Monoclonal Antibody against NKp46 for the Treatment of Type 1 Diabetes Mellitus (T1D)
Inventor:	Dr. **ZVI PELEG** Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture Robert H. Smith Faculty of Agriculture, Food and Environment
Invention:	Development of New Elite Sesame Cultivars Adapted for Mechanical Harvest with Enhanced Yield and Seed Quality
Inventor:	Dr**. ELAD HOROWITZ** Department of Immunology and Cancer Research Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention:	Methods of Predicting Efficacy of an Anti-VEGFA Treatment for Solid Tumors
Inventor:	Ms. **GEULA HANIN** Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science
Invention:	Down Regulating miRNA-132 for the Treatment of Lipid Related Disorders

KAYE WINNERS

Kaye Winners 2014

Inventor: Prof. **SIMON BENITA** & Dr. **TAHER NASSAR**
Institute for Drug Research (IDR)
School of Pharmacy, Faculty of Medicine
Invention: Development of an Original Nano-Delivery Platform for Markedly Improving the Oral Absorption of Poorly Absorbed Drugs and Proteins

Inventor: Prof. **SHLOMO MAGDASSI**
Casali Center for Applied Chemistry
Institute of Chemistry, Faculty of Science
Invention: Transparent Conductive Coffee Rings for Touch Screens

Inventor: Prof. **MICHAL BANIYASH**
Department of Immunology and Cancer Research
Institute for Medical Research - Israel-Canada
Hebrew University-Hadassah Medical School
Invention: Novel Prognostic/Diagnostic Biomarkers for Detecting the Immune Status of Patients Suffering from Diseases Characterized by Chronic Inflammation and Associated Immunosuppression

Inventor: **MICHAEL BRANDWEIN**
Biofilm Research Laboratory
Institute of Dental Sciences
Faculty of Dental Medicine
Invention: Novel AntiBiofilm/Antibacterial Polymer for Food Packaging

Inventor: **YOTAM BAR-ON**
Department of Immunology and Cancer Research
Institute for Medical Research - Israel-Canada
Hebrew University-Hadassah Medical School
Invention: Development of Novel Antibodies for the Treatment of Influenza Infections

Kaye Winners 2013

Inventor: Prof. **ILAN SELA**
Robert H. Smith Institute for Plant Sciences and Genetics
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Silencing of Bee-Affecting Viral Genes in order to Control CCD

Inventor: Prof. **AVI DOMB**
Institute for Drug Research (IDR)
School of Pharmacy, Faculty of Medicine
Invention: Maze Water Purification System

Inventor: Prof. **RAYMOND KAEMPFER**
Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada (IMRIC)
Hebrew University-Hadassah Medical School, Faculty of Medicine
Invention: Reduction of Inflammatory Disease Symptoms with Short Peptides that Inhibit Signaling through CD28

Inventor: **URI BEN-DAVID**
Department of Genetics
Silberman Institute of Life Sciences
Faculty of Science
Invention: PluriSIns – Pluripotent Specific Inhibitors

Inventor: **MARGANIT COHEN-AVRAHAMI**
Institute of Chemistry
Faculty of Science
Invention: Transdermal Delivery Vehicles for NSAIDs: The Combination of Liquid Crystals with Cell-Penetrating Peptides

Inventor: **NOA KAYNAN**
Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC)
Hebrew University-Hadassah Medical School, Faculty of Medicine
Invention: Generation of 'Super' Fc Antibody for Improving Medical Treatments

Kaye Winners 2012

Inventor: Prof. **RAPHAEL (RAFFI) GOREN**
The Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: The Search for a Novel Water-Soluble Cyclopropene Derivative Antagonist (CPAS) of Ethylene Action in Agricultural Crops

Inventor: Prof. **SAUL YEDGAR**
Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
Invention: A Novel Class of Multi-Functional Anti-Inflammatory Drugs (MFAIDs) for the Treatment of Inflammatory/Allergic Diseases

Inventor: Prof. **HAYA LORBERBOUM-GALSKI**
Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
Invention: Cell and Organelle-Directed Protein Replacement Therapy for Mitochondrial and other Metabolic Diseases

Inventor: **LITAL MAGID**
Institute for Drug Research
Faculty of Medicine
Invention: Novel Cannabinoid Receptor Type 2 Selective Agonists for the Treatment of Inflammatory Conditions and Acute Central Nervous System Injury

Inventor: **IDIT SAGIV-BARFI**
Alexander Silberman Institute of Life Sciences
Faculty of Science
Invention: Novel T Cells Proliferation Inhibitors

Inventor: **CHAMUTAL GUR**, M.D.
PhD student under the supervision of Prof. Ofer Mandelboim
Lautenberg Center for General and Tumor Immunology
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
Invention: Generation of Anti-NKp46 mAb for the Treatment of Type 1 Diabetes

Kaye Winners 2011

Inventor: Prof. **HAIM D. RABINOWITCH**
Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Genetic Innovations in Vegetable Crops: The Cornerstone of Israel's Prominence in Hi-BioTech Seed Industries

Inventor: Prof. **DAN GAZIT**
Skeletal Biotech Laboratory
Faculty of Dental Medicine
Invention: Novel Technologies for Adult Stem Cell Manipulation and Applications in Tissue Engineering and Regenerative Medicine

Inventor: Dr. **RAANAN FATTAL**
Benin School of Computer Science and Engineering, Faculty of Science
Invention: Second-Generation Wavelet-Based Image Enhancement

Inventor: Ms. **KATY MARGULIS-GOSHEN**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Formation of Organic Nanoparticles from Microemulsions: Enhancing Water Solubility for Improved Biological Performance in Pharmaceutics, Agriculture and Cosmetics

Inventor: Mr. **YFTAH TAL-GAN**
Institute of Chemistry, Faculty of Science
Invention: Development of New Peptide-Based Inhibitors of Protein Kinase B (PKB) as Potential Drugs for Cancer

Inventor: Ms. **ADA GRIN**
Institute for Drug Research
Faculty of Medicine
Invention: Tissue Regeneration Membrane

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KAYE WINNERS

Kaye Winners 2010

Inventor: Prof. **NISSIM BENVENISTY**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Technologies to Enable Directed Differentiation of Human Embryonic Stem Cells

Inventor: Prof. **ODED SHOSEYOV**
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
The Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Molecular Farming of Human Recombinant Collagen in Transgenic Tobacco Plants

Inventor: Prof. **SHMUEL PELEG**
Benin School of Computer Science and Engineering, Faculty of Science
Invention: Video Synopsis: Summarizing and Indexing Surveillance Video

Inventor: Prof. **ALEXANDER VAINSTEIN**
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
The Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Towards Tailor-Made Crops and Compounds

Inventor: Ms. **MICHAL ISAACSON**
PhD student of Dr. Noam Shoval, Department of Geography, Faculty of Social Sciences
Invention: A Novel System for Tracking and Analyzing Human Spatial Behavior by Monitoring People's Mobility for Tourism, Town Planning and Healthcare Applications.

Inventor: Mr. **AVIAD HAI**
PhD student of Prof. Micha Spira Department of Neurobiology Alexander Silberman Institute of Life Sciences
Faculty of Science
Invention: In-cell Recordings and Stimulation: A Fundamental Breakthrough Concept and Technology for Neuroprosthetics

Inventors: Mr. **EZEQUIEL WEXSELBLATT**
PhD Supervisor: Prof. Jehoshua Katzhendler Institute for Drug Research, School of Pharmacy, Faculty of Medicine
Mr. **ROEE VIDAVSKI**
PhD Supervisor: Prof. Gad Glaser Department of Developmental Biology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention: Compounds for Treating Bacterial Infections

Inventor: Mr. **MICHAEL GROUCHKO**
PhD student of Prof. Shlomo Magdassi Casali Institute of Applied Chemistry, Institute of Chemistry
Faculty of Science
Invention: Air Stable Copper Nanoparticles: Conductive Inks for Printed Electronics

Kaye Winners 2009

Inventor: Prof. **ABRAHAM HOCHBERG**
Department of Biological Chemistry, Faculty of Science
Invention: From a Noncoding Oncofetal RNA to Cancer Therapy: Personalizing Medicine with H19

Inventor: Prof. **SHLOMO SASSON**
Department of Pharmacology & Experimental Therapeutics, School of Pharmacy
Invention: Novel D-Xylose Derivatives: A New Class of Antihyperglycemic Compounds

Inventor: Prof. **DAPHNE ATLAS**
Department of Biological Chemistry, Faculty of Science
Invention: Development of Small Molecules for the Treatment of Neurodegenerative Diseases

Inventor: Prof. **ARIEH GERTLER**
Institute of Biochemistry, Food Science and Nutrition,
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Development of Leptin Antagonists and their Potential Use as Therapeutic Modalities

Inventor: Mr. **SHAY SELA**
PhD student of Prof. Eli Keshet, Institute for Medical Research Israel-Canada, Faculty of Medicine
Invention: The Identification of a Novel Prognostic and Diagnostic Marker of Preeclampsia

Inventor: Mr. **DIMA LIBSTER**
PhD student of Prof. Nissim Garti and Prof. Gil Shoham,
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Lyotropic Hexagonal Liquid Crystals as Carriers of Therapeutic Peptides for Transdermal Administration:
Solubilization and Structural Characterization

Inventor: Mr. **SHAUL LAPIDOT**
PhD student of Prof. Oded Shoseyov, Smith Institute for Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food & Environment
Invention: Compositions Comprising Fibrous Polypeptides and Polysaccharides

Inventor: Ms. **NETA PESSAH**
PhD student of Prof. Meir Bialer and Prof. Boris Yagen, School of Pharmacy
Invention: α-Fluoro and α-Chloro 2,2,3,3 -Tetramethycyclopropylcarboxamide:
Two Novel Chemical Entities for the Treatment of Epilepsy and Other Disorders

KAYE WINNERS

Kaye Winners 2008

Inventor: Prof. **DANIEL COHN**
Casali Institute of Applied Chemistry, Institute of Chemistry, Faculty of Science
Invention: Tailor-made Biodegradable Polymers for the Prevention of Post-surgical Adhesions

Inventor: Prof. **HERMONA SOREQ**
Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science
Invention: Engineered Human Cholinesterases and RNA-Targeted Agents to Suppress Their Functioning

Inventors: Dr. **ARIE DAGAN** and Prof. **SHIMON GATT**
Department of Biochemistry, Faculty of Medicine
Invention: Development of Novel Anti-cancer Drugs

Inventor: Mr. **YANIV SEMEL**
PhD student under the supervision of Prof. Dani Zamir
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Phenom Networks: A Web-based System for the Analysis of Quantitative Phenotypes on Both Plants and Animals for Breeding and Research

Inventor: Mr. **NADAV KIMELMAN-BLEICH**
PhD and DMD student under the supervision of Prof. Dan Gazit
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Scaffolds with Oxygen Carriers and Their Use in Tissue Engineering

Inventor: Mr. **DIMA SHEYNI**
PhD student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Ultrasound-based Non-viral Gene Delivery Induces Bone Formation In Vivo

Inventor: Mr. **MATAN RAPOPORT**
PhD student under the supervision of Prof. Haya Lorberboum-Galski
Department of Cellular Biochemistry and Human Genetics, Faculty of Medicine
Invention: Enzyme Replacement Therapy for Mitochondrial Disorders: Lipoamide Dehydrogenase Deficiency as a Proof-of-principle

Kaye Winners 2007

Inventor: Prof. **DANI ZAMIR**
Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Improving Plant Breeding Using Exotic Genetic Libraries

Inventors: Prof. **MEIR BIALER** and Prof. **BORIS YAGEN**
Departments of Pharmaceutics, and Medicinal Chemistry and Natural Products
School of Pharmacy, Faculty of Medicine
Invention: Design and Development of Valnoctamide: A New Drug with Stereoselective CNS Activities

Inventor: Prof. **LEO JOSKOWICZ**
School of Engineering and Computer Science, Faculty of Science
Invention: An Image-guided System with a Miniature Robot for Precise Positioning and Targeting in Keyhole Neurosurgery

Inventor: Mr. **YANIV LINDE**
Student of Prof. Chaim Gilon, Department of Organic Chemistry, Faculty of Science
Invention: A Novel Oral Anti-obesity Drug Candidate: Reduction of Food Consumption by Melanocortin-4 Peptide Agonist

Inventor: Mr. **EREZ PODOLY**
Student of Prof. Hermona Soreq, Department of Biological Chemistry, Faculty of Science
Invention: A Natural Brain Protein Protection from Alzheimer's Disease

Inventor: Mr. **MORAN FARHI**
Student of Prof. Alexander Vainstein and Dr. Hagai Abeliovich
Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Engineering Saccharomyces cerevisiae for the Production of Methylbenzoate and Resistance to Benzoic Acide for Uses in the Food Industry

Inventor: Mr. **YUVAL AVNIR**
Student of Prof. Yechezkel Barenholz, Department of Biochemistry, Faculty of Medicine
Invention: Liposomal Glucocorticoids for Treating Inflammatory States

Kaye Winners 2006

Inventor: Dr. **YONATAN ELKIND**
Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Breeding of Pepper Varieties Adapted for Protected Cultivation under Mild Winter Conditions

Inventor: Prof. **ELKA TOUITOU**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Ethosome Innovative Technology

Inventor: Prof. **MOSHE KOTLER**
Department of Pathology, Faculty of Medicine
Invention: A Prophylactic Vaccine Preventing a Mortal Viral Disease of Koi Fish and Carps

Inventors: Prof. **MEIR BIALER** and Prof. **BORIS YAGEN**
Departments of Pharmaceutics, and Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Design and Development of a New Drug with Enantioselective CNS Activities – Propylisopropyl Acetamide (PID)

Inventor: Ms. **ELENA KHAZANOV**
Student of Prof. Yechezkel Barenholz, Department of Biochemistry, Faculty of Medicine
Invention: Tumorosuppressive Therapy by Liposome Containing both Doxorubicin and Ceramide

Inventor: Mr. **YEHOSHUA MAOR**
Student of Prof. Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Novel Anti-hypertensive Agents based on Cannabis Constituent with Anti-inflammatory Properties-synergistic Beneficial Cardiovascular Effects

Inventor: Mr. **NIR QVIT**
Student of Prof. Chaim Gilon, Department of Organic Chemistry, Faculty of Science
Invention: SIB: Small Integrated Building Blocks

Inventor: Ms. **KHULOUD TAKROURI**
Student of Prof. Morris Srebnik
Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Synthesis and Anti-microbial Activity of a Novel Series of Alkyldimethylamine Cyanoboranes and their Derivatives

Kaye Winners 2005

Inventors: Prof. **SHLOMO MAGDASSI** and Dr. **YELENA VINETSKY**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Ceramic Ink Jets for Digital Printing on Glass

Inventor: Dr. **ZEHAVA UNI**
Department of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Enhancement of Development of Oviparous Species by In Ovo Feeding – Feeding Eggs with Natural Nutrient Supplements before They Hatch to Produce More Robust Chicks

Inventor: Prof. **SIMON BENITA**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Cationic Emulsions for Ophthalmic Drug Delivery

Inventor: Prof. **URI BANIN**
Department of Physical Chemistry and Center for Nanoscience and Nanotechnology, Faculty of Science
Invention: Semiconductor Nanocrystals for Optical, Electronic, Imaging and Biological Applications

Inventor: Mr. **TALEB MOKARI**
Student of Prof. Uri Banin
Department of Physical Chemistry and Center for Nanoscience and Nanotechnology, Faculty of Science
Invention: Semiconductor Nanocrystals with Conductive Zone

Inventor: Mr. **ADEL JABBOUR**
Student of Prof. Doron Steinberg and Prof. Morris Srebnik
Department of Medicinal Chemistry and Natural Products, School of Pharmacy and Institute of Dental Sciences, Faculty of Dental Medicine
Invention: Interfering in Bacterial Cross-talk: A Novel Means to Influence Pathogenicity of Biofilms

Inventor: Ms. **NATALYA KOGAN**
Student of Prof. Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Cancer Drug – Use of Quinonoid Derivatives of Cannabinoids and Such Novel Compounds in the Treatment of Malignancies

Inventor: Mr. **RANI POLAK**
Student of Prof. Eran Goldin and Dr. Eitan Israeli, Faculty of Medicine
Invention: GourMed – Cooking school that will develop recipes and run a course for people with dietary limitations due to chronic diseases

Inventors: Staff of Prof. **MICHA WEISS**
Department of Computerized Information Systems, Computerized Student Course Registration Project Team
Invention: Computerized Student Course Registration Project Team"Smart Raffle"

Kaye Winners 2004

Inventor: Prof. **AMNON SHASHUA**
School of Engineering and Computer Science, Faculty of Science
Invention: Monocular Visual Processing for On-board Driving Assistance

Inventors: Prof. **ITAMAR WILLNER**, Dr. **EUGENII KATZ**,
Dr. **FERNANDO PATOLSKY** and Mr. **YOSSI WEIZMANN**
Institute of Chemistry, Faculty of Science
Invention: Optoelectronic Detection of Telomerase in Cancer Cells: Development of a Screening Test for Urinary Bladder in Urine Samples

Inventors: Prof. **MICHAEL FRIEDMAN** and Prof. **AMNON HOFFMAN**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Dr. **ERAN LAVY**
Koret School of Veterinary Medicine, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Novel Gastro-retentive Dosage Form (GRDF) – A Means for Sustained Administration of Drugs with Narrow Absorption Window at the Upper Gastrointestinal Tract

Inventors: Mr. **AVIRAM SPERNATH** and Ms. **IDIT YULI-AMAR**
Students of Prof. Nissim Garti, Casali Institute of Applied Chemistry, Faculty of Science
Invention: New Nanosized Vehicles for Triggering and Targeting of Phytochemicals

Inventor: Ms. **AVITAL TORRES-KERNER**
Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy
Invention: New Natural Sunscreens: UVR Absorbing Compounds from Lichens and Cyanobateria

Inventor: Dr. **HIJAZI ABU ALI**
Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Novel Organoboronic Compounds – Synthesis and Biological Activity

Inventor: Mr. **TAREQ JUBETH**
Student of Prof. Abraham Rubinstein and Prof. Yechezkel Barenholz, Departments of Pharmaceutics and Biochemistry, Faculty of Medicine
Invention: Targeting the Intestinal Mucosa by Charged Liposomes

Inventor: Mr. **OMRI BEN-ZION**
Student of Prof. Amos Nussinovitch
Institute of Biochemistry, Food Science and Nutrition
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Novel Method and Apparatus for Testing the Rolling Tack of Pressure-sensitive Adhesive Methods

KAYE WINNERS

Kaye Winners 2003

Inventors: Prof. **NISSIM GARTI** and Dr. **ABRAHAM ASERIN**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Nano-sized Self-assembled Structured Liquids

Inventor: Dr. **ABDULLAH HAJ-YEHIA**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Design, Synthesis and Biological Activity of Novel Hybrid Drugs

Inventor: Dr. **JONATHAN MIRVIS**
Melton Centre for Jewish Education, School of Education
Invention: Florence Melton Adult Mini-School: A Social Franchise Model

Inventor: Ms. **DRORA BALAGA**
Smith Institute of Plant Sciences and Genetics in Agriculture,
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: "TOMATO" Computerized System, Breeding Hybrid Varieties

Inventor: ENG. **TOM KOEVARY**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: The Centre for Process Development: A Platform for Thousands of "Inventors to Order" for Industry

Inventor: Prof. **ZICHRIA ZAKAY-RONES**
Institute of Microbiology, Faculty of Medicine
Invention: Anti-cancer Therapy by Newcastle Disease Virus (NDV)

Inventor: Mr. **ARIE GRUZMAN**
Student of Prof. Shlomo Sasson, Department of Pharmacology and Experimental Therapeutics, School of Pharmacy,
Faculty of Medicine
Invention: Novel Anti-hyperglycemic Drugs

Inventor: Ms. **AVIVA JOSEPH**
Student of Prof. Eli Kedar and Prof. Yechezkel Barenholz, The Lautenberg Center for Immunology
and Department of Biochemistry, Faculty of Medicine
Invention: INFLUSOME-VAC, 3 Novel, Highly Efficient Influenza Vaccines

Inventor: Mr. **HADI ASLAN**
Student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Novel Methods for Stem Cells Based Therapy

Inventor: Mr. **SHAI SHALEV-SHWARTZ**
Student of Prof. Yoram Singer, School of Engineering and Computer Science, Faculty of Science
Invention: A Query Melody System

Inventor: Mr. **MICKEY KOSLOFF**
Student of Prof. Zvi Selinger, Silberman Institute of Life Sciences, Faculty of Science
Invention: Drug-assisted Catalysis, Novel Cancer Therapeutics

Inventor: Mr. **ABED AL-AZIZ QUNTAR**
Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy,
Faculty of Medicine
Invention: The Synthesis of Novel Di-and Tri-Vinylphosphonates

Kaye Winners 2002

Inventor: Prof. **SHMUEL BEN-SASSON**
Department of Experimental Medicine and Cancer Research, Faculty of Medicine
Invention: Kin-Ace Technology – A Broad Platform Technology for Disease Control via the Interception
of Intracellular Signaling

Inventors: Prof. **MICHAEL SELA** and Dr. **DORON STEINBERG**
Department of Oral Biology, Faculty of Dental Medicine
Prof. **MICHAEL FRIEDMAN**
School of Pharmacy, Faculty of Medicine
Prof. **W. AUBREY SOSKOLNE**
Department of Periodontics, Faculty of Dental Medicine
Invention: Periochip-sustained Release Treatment for Periodontal Diseases

Inventor: Prof. **GERSHON GOLOMB**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Nanoparticulate Drug Delivery Systems for Restenosis Therapy

Inventor: Prof. **SHMUEL PELEG**
School of Engineering and Computer Science, Faculty of Science
Invention: OMNISTEREO: Capturing and Viewing 3D Stereoscopic Panoramic Images

Inventor: Dr. **SHLOMO YITZCHAIK**
Department of Inorganic and Analytical Chemistry, Faculty of Science
Invention: Molecular Layer Epitaxy (MLE)

Inventor: Dr. **WILLIAM (BILL) BREUER**
Department of Biological Chemistry, Faculty of Science
Invention: A Test for the Detection of Toxic Forms of Iron in Human Plasma

Inventor: Dr. **ITSHAK GOLAN**
The Lautenberg Center for Immunology, Faculty of Medicine
Invention: Novel CD44 Variant: Potential Target in the Therapy of Rheumatoid Arthritis

Inventor: Mr. **EYTAN KLAUSNER**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Novel Gastroretentive Dosage Forms

Inventor: Ms. **NINA ISOHERRAREN**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: New Anti-epileptic Drug

Inventor: Mr. **ALEXEI SHIR**
Department of Biological Chemistry, Faculty of Science
Invention: Targeted dsRNA Brain Cancer Therapy

Inventor: Mr. **FERNANDO PATOLSKY**
Institute of Chemistry, Faculty of Science
Invention: Creating Multi-stress Resistance in Arabidopsis

Inventor: Mr. **ALEXANDER MAZEL**
Department of Plant Sciences, Faculty of Science
Invention: Creating Multi-stress Resistance in Arabidopsis Plants

Inventor: Ms. **LITAL ALFONTA**
Institute of Chemistry, Faculty of Science
Invention: An Electronic Sensor to Identify Drug Resistance in HIV Patients

Inventor: Mr. **YOSSI GAFNI**
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Vascular Tissue Engineering

Inventor: Dr. **GADI PELLED**
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Engineering of Complex Hybrid Tissues

KAYE WINNERS

Kaye Winners 2001

Inventor: Prof. **EDUARDO MITRANI**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Micro-organ Technology for Genetically Engineered Bio-pumps

Inventor: Prof. **SIMON BENITA**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Drug Delivery through Positively Charged Submicron Emulsions

Inventors: Mr. **DANNY VINITSKY** and Mr. **EITAN RAZ**
Department of Computerized Information Systems
Mr. **YEHAVI BOURVINE**
Computation Center
Invention: Short Message Service (SMS) Supplied by All Cellphone Operators Sending Short Text Messages to Students' Phones

Inventor: Dr. **ANDREW SHIPWAY**
Institute of Chemistry, Faculty of Science
Invention: Novel Technology for the Generation of Electronic Circuits Using a Novel Computer-assisted Printing Method

Inventors: Prof. **YONA CHEN**, Prof. **YITZHAK HADAR** and Mr. **AMIR TOAR**
Department of Soil and Water Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: "RollCom" – A Novel, Simple and Easy to Operate Composting Apparatus

Inventor: Prof. **ITAMAR GATI**
Department of Psychology, Faculty of Social Sciences, and School of Education
Invention: "Future Directions" Internet Site to Facilitate Career Decision Making

Inventor: Ms. **MIRIAM V. KOTT-GUTKOWSKI**
Silberman Institute of Life Sciences, Faculty of Science
Invention: MDRTL Ex-Vivo Kit Measure and Select Effective Multi-drug Resistance Blocker

Inventor: Ms. **SUSANNA TCHILIBON**
School of Pharmacy, Faculty of Medicine
Invention: HU-320 Anti-inflammatory Drug

Inventor: Mr. **YEHUDA GIL**
The Center for Multimedia-Assisted Instruction
Invention: The Mobile Smart Table-MST Combining Various Multimedia Accessories

Kaye Winners 2000

Inventor: Prof. **MARTA WEINSTOCK-ROSIN**
Department of Pharmacology, School of Pharmacy, Faculty of Medicine
Invention: Development of Exelon: A Drug for the Treatment of Alzheimer's Disease (AD)

Inventor: Prof. **MEIR BIALER**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Valproyl Glycinamide (TV 1901): A New Anti-epileptic (AED) and CNS Drug for the Treatment of Migrane, Neuropathic Pain and Mania

Inventors: Prof. **AVNER ADIN** and Dr. **NICOLAI VESCAN**
Assistants: Ms. **RIVKA KALBO** and Ms. **LUBA RUBINSTEIN**
Division of Environmental Sciences, School of Applied Science, Faculty of Science
Invention: "Electro-Flocculation" for Water Treatment and Reuse

Inventor: Dr. **BARUCH SCHWARZ**
School of Education
Invention: The "Kishurim Project"

Inventor: Mr. **ITAI PELES**
Computer Authority, Ein Kerem
Invention: IBTS-Internet Based Testing System to Replace Traditional Questionnaires and Written Tests

Inventor: Mr. **REUVAN AMAR**
Computer Authority, Mount Scopus
Invention: HUDAP-Hebrew University Data Analysis Package

Inventor: Mr. **MEIR GLICK**
Department of Medicinal Chemistry, School of Pharmacy, Faculty of Medicine
Invention: Novel Stochastic Algorithm for Use in Life Sciences, Physics, Telecommunications and Economics

Inventor: Mr. **GIL RONEN**
Department of Genetics, Silberman Institute of Life Sciences, Faculty of Science
Invention: Novel Plant Gene "B" and Methods to Genetically Manipulate Color Formulation in Plants

Inventor: Mr. **NIR SITVANI**
Department of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Antelope-like Stimulating Device to Reduce Stress of Wild Animals in Captivity

Kaye Winners 1999

Inventor: Dr. **ODED SHOSEYOV**
Department of Plant Pathology and Microbiology,
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: CBD Technology – Using the CBD Protein to Bind Various Molecules to Cellulose

Inventor: Prof. **ELISHA TEL-OR**
Department of Agricultural Botany and Otto Warburg Center for Biotechnology in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Azolla Biofilter for Waste Treatment

Inventor: Prof. **HERMONA SOREQ**
Department of Biological Chemistry, Faculty of Science
Invention: Antisense Technology – To Treat Various Neurodegenerative Syndromes

Inventors: Mr. **YARON BEN-ETZION**
Head of Manpower and Payroll
Ms. **CHAVA SPRUCH**
Head of Payroll System, Department for Computerized Information Systems
Invention: A Solution for BUG 2000

Inventor: Mr. **LEON MARGOLIN**
Department of Anatomy and Cell Biology, Faculty of Medicine
Invention: A Mask for the Treatment of Headaches

Inventor: Mr. **GADI TURGEMAN**
Bone Gene Therapy and Molecular Pathology Laboratory, Faculty of Dental Medicine
Invention: The Reciprocal Differentiation System, Controlling the Level of BMP2 Expression

KAYE WINNERS

Kaye Winners 1998

Inventor: Prof. **ITAMAR WILLNER**
Institute of Chemistry, Faculty of Science
Invention: Layered Electrically-Contacted Enzyme-Electrodes and Antigen/Antibody Assembles for Electrochemical and Piezoelectrical Biosensors and Immunosensor Devices

Inventors: Prof. **NISSIM GARTI**
Casali Institute of Applied Chemistry, Faculty of Science
Dr. **YURI FELDMAN**
Department of Applied Physics, Faculty of Science
Invention: Time Domain Dielectric Spectrometer (TDDS) for Investigation of Advanced Materials and Medical Systems

Inventors: Prof. **MICHAEL SCHIEBER**, Dr. **JACOB NISSENBAUM**, Dr. **LEONID MELKHOV** and Ms. **ASAF ZUCK**
School of Applied Science, Faculty of Science
Invention: Polycrystalline Hg 12 X-Ray Detector Plates for Digital Radiology

Inventors: Prof. **DAVID AVNIR**
Institute of Chemistry, Faculty of Science
Prof. **SERGEI BRAUN**
Silberman Institute of Life Sciences, Faculty of Science
Prof. **OVADIA LEV**
Division of Environmental Sciences, Faculty of Science
Prof. **MICHAEL OTTOLENGHI**
Institute of Chemistry, Faculty of Science
Invention: Reactive Organic Sol-gel Ceramic Materials

Inventor: Prof. **JOSEPH HIRSCHBERG**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Genetic Engineering of Astaxanthin Production in Transgenic Plants

Inventor: Mr. **AMIR ZUKER**
Kennedy-Leigh Centre for Horticultural Research, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Transgenic Carnation Plants with Novel Characteristics

Inventor: Mr. **GALEN MARQUIS**
Institute of Jewish Studies, Faculty of Humanities
Invention: Production of the Hebrew University of Jerusalem Bible Project

Inventor: Mr. **JEHUDA BASNIZKI**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Novel Seed-planted Hybrid Varieties of the Globe Artichoke

Inventor: Mr. **ALEXEY KAMYSHNY**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Form III Aspartame

Kaye Winners 1997

Inventors: Prof. **YECHEZKEL BARENHOLZ** and **DR. RIVKA COHEN**
Department og Biochemistry, Faculty of Medicine
Prof. **ALBERTO GABIZON** and Dr. **DORIT GOREN**
Hadassah University Hospital
Invention: DOXIL – Liposomal Doxorubicin for Cancer Treatment

Inventor: Prof. **DAPHNE ATLAS**
Department of Biological Chemistry, Faculty of Science
Invention: A New Anti-Parkinson's Drug

Inventors: Prof. **NAVA BEN-ZVI**
Center for Multimedia Assisted Instruction
Mr. **DAVID RASHTY**
Computation Center
Mr. **ELI KANAI**
Snunit Educational Information System, Faculty of Science
Invention: Snunit Educational Information System

Inventor: Mr. **YOAV SMITH**
Faculty of Medicine
Invention: The Dermal Imaging System

Inventor: Ms. **VARDA HERSHKO**
Institute of Biochemistry, Food Science and Nutrition, Faculty of Agriculture
Invention: Hydrocolloid Coatings for Food and Agricultural Products

Inventor: Mr. **SHMARYAHU EZRAHI**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Fire-resistant Hydraulic Fluids

Kaye Winners 1996

Inventor: Prof. **SHABTAY DIKSTEIN**
School of Pharmacy, Faculty of Medicine
Invention: Development of Topically-applied Drugs for the International Market

Inventor: Prof. **ABRAHAM SZTEJNBERG**
Department of Plant Pathology and Microbiology, Faculty of Agriculture
Invention: AQ10: A Novel Biofungicide for the Control of Plant Diseases

Inventor: Prof. **DAN DAVIDOV** and Dr. **MICHAEL GOLOSOVSKY**
Racah Institute of Physics, Faculty of Science
Invention: High-resolution Millimeter-wave Scanning Microscope

Inventor: Prof. **CHAIM GILON**
Institute of Chemistry, Faculty of Science
Invention: Backbone Cyclization and Cycloscan TM: Novel Technologies for the Fast Discovery of New Peptide Based Drugs

Inventor: Mr. **MICHAEL HOICHMAN**
Computer Programmer, Faculty of Medicine
Invention: The "Maestro" Program for Controlling Auditory Experiments

Inventor: Mr. **BARAK HERSHKOVITZ**
Faculty of Medicine
Invention: "Biochem Thinker": A New Computer Program to be used by Biochemistry Students as a Tutorial Tool

Kaye Winners 1995

Inventor: Prof. **ITAI BAB**
Bone Laboratory, Faculty of Dental Medicine
Invention: Osteogenic Growth Peptide (OGP)

Inventor: Prof. **NISSIM GARTI**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: New Emulsifiers

Inventor: Prof. **YECHEZKEL BARENHOLZ**
Department of Biochemistry, Faculty of Medicine
Invention: A Novel Approach to Obstein Efficient and Stable Remote Drug Loading of Liposomes for Clinical Use

Inventors: Dr. **EUGENII KATZ**, Ms. **AZALIA RIKLIN** and Ms. **RON BLONDER**
Institute of Chemistry, Faculty of Science
Invention: Development of Biosensor and Immunosensor Devices

Kaye Winners 1994

Inventors: Dr. **B. SCHWARZBURD** and Dr. **MARCELLO CHAFFER**
Department of Animal Sciences, Faculty of Agriculture
Invention: Membrane Vesicles of E. coli as a Potent Non-toxic Vaccine Against Colibacillosis in Poultry

Inventor: Mr. **DUDU RASHTY**
Computation Center, Faculty of Science
Invention: Hebrew University Information Retrieval System

Inventors: Prof. **HAIM RABINOWITCH** and Prof. **NACHUM KEDAR**
Department of Field and Vegetable Crops, Faculty of Agriculture
Invention: Development of Long Shelf-life Tomatoes