

# Scientific Research

## A speck of the future

*Photo: Profs. Shoseyov (left) and Porath*



How are a grain of sand and a poplar tree like a computer? It might sound like a riddle worthy of the Mad Hatter but the answer gives us a glimpse into a future hi-tech wonderland where, through the joint efforts of two Hebrew University researchers and their teams, the minutest of computer components will self-assemble and provide hitherto unimaginable memory capacity.

The development of these ‘specks’ of computer memory using a protein from the poplar tree and the main chemical constituent of sand has been achieved by a remarkable collaboration between two laboratories specializing in highly diverse fields. Professor Danny Porath’s team is based at the Institute of Chemistry on the Edmond J.

Safra Campus in Jerusalem and Professor Oded Shoseyov’s group at the Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture at the [Robert H. Smith Faculty of Agriculture, Food and Environment in Rehovot](#).

### **The Faculty of Science**

The Faculty of Science follows in the steps of the original group of scientists who founded The Hebrew University and initiated the basic and applied research in the Natural Sciences. Since the 1950's, the Faculty has been located at the Edmond J. Safra Campus in Givat Ram.

The Faculty of Science encompasses research institutes and teaching departments in the major fields of Mathematics, Physics, Chemistry, Life Sciences and Earth Sciences, together with a School of Engineering and Computer Science, and a Science Teaching Unit. There are some 240 faculty members, approximately 2,000 undergraduates and 1,400 MSc. and PhD. students. In addition, the Faculty of Science incorporates many research centers, active in diverse fields such as: Nanoscience and Nanotechnology, Applied Structural Biology, Marine Biogeochemistry, Computational Quantum Chemistry, Mathematical Analysis, and Molecular Dynamics. There are two other interdisciplinary research centers which also provide teaching programs at the PhD. level: Neural Computation and the Center for Rationality Research.

Many members of the Faculty of Science have been internationally acclaimed, and this



renown has brought them copious awards and honours in their specific fields of expertise. A short list of just some of the recent prizes includes: **The Nobel Prize** (Prof. R. Aumann, Game Theory, 2006); **The Israel Prize** (Prof. Z. Selinger [ז'לנר], Biology, 2007; Prof. Y. Bekenstein, Physics, 2005; Prof. Z. Rapaport, Chemistry, 2006); **The Wolf Prize** ( Prof. A. Levitzki, Life Sciences, 2005; Prof. H. Furstenberg,

Mathematics, 2007; Prof. Z. Selinger [ז'לנר], Biology, 2007); **The EMET Prize** (Prof. H. Furstenberg, Mathematics, 2004; Prof. M. Rabin, Computer Science, 2004; Prof. Z. Selinger [ז'לנר] , Biological Chemistry, 2005; Prof. Z. Garfunkel, Geology, 2006; Prof. Batsheva Kerem, Life Sciences, 2008; and Prof. I. Willner, Chemistry, 2008).



In order to maintain this level of excellence and to reach new heights, each year the Faculty of Science recruits several new members who have excelled in the above fields of science. We are interested in those young recruits who will combine more than one field of expertise and encourage their students to acquire a broad, yet deep education, with the aim of shaping the future of Israeli science and technology.