



CANEUS International, Concordia University, the IEEE Montreal Section and the Chapter of Communications Society (ComSoc), are inviting all interested IEEE Montreal Communications & IT Chapter members and other engineers, technologists, and students to a technical seminar:

SEMINAR: SMALL SATELLITES Developments and Radio Communication Impacts

**Prof. Jacob Gavan, IEEE Fellow
Holon Institute of Technology (HIT) Israel**

October 18th, 2012

6:00 – 8:00 PM

CIADI, Room EV012.163

1515 St. Catherine Street West, Concordia University

ADMISSION: FREE, LIMITED TO 40 PARTICIPANTS

Contact: Ms. Jayne Claassen jayne.claassen@concordia.ca, or Dr. Anader Benyamin-Seeyar at anader.benyamin@ieee.org

Abstract

A short introduction will describe: The tremendous developments in satellites from the first Sputnik in 1957 to the mega-satellite Sky-Terra in 2010, their numbers, main orbits and the importance of the radio communication sub-systems. An extreme miniaturization as predicted by Moore's law enables the design and realization of high quality small satellites. The classification, advantages and disadvantages of micro, nano, pico and even femto satellites will be discussed as well as their main applications. Will be described the pioneering developments of the radio amateurs OSCAR satellites and ground stations, followed now by the design and development of hundreds low cost small satellites by students all over the world. This enhanced significantly the quantity and quality of the engineers and scientists in the aerospace and radio communication fields. In addition will be discussed advanced small satellites selected projects especially for the NASA and special missions, as well as main activities in the USA, Europe, and all over the world including Israel. The seminar will conclude by forecasting the future of small satellites and an extended bibliographic list will be provided.

Biography

Jacob Gavan earned the B.Sc. degree from the Haifa Technion in Israel 1961, the MEE degree in the field of radio and satellite communication from Eindhoven Technological University in the Nederland 1969 through a Philips Company scholarship, both, with distinction, and the Ph.D. degree in radio communication in ENSERG Grenoble (France) 1979 with congratulations of the Jury. Jacob main tasks were as RF technician and engineer for the Israel army and PTT in the construction of a high power broadcasting transmitters center. Jacob has worked 1 year for MASHAV training projects in Africa, after as ITU expert for the Congolese Telecom. 5 years planning project and training of telecommunication technical people. Following his MEE graduation he worked from 1969 to 1971 as senior engineer for the IAI (ELTA) in Radio communication, Control and Radar. In 1971 he was asked by the ITU to participate in the founding of a telecommunication engineering school in cooperation with the ministry of PTT and the local university and was teaching radio and satellite communications. From 1972 to 1974 his function was head of the ITU mission in the Republic of Congo. From 1975 he has switched to the academy in Israel

Jacob Gavan was elected as IEEE fellow in 1995 and founded a department of Communication Engineering at the Holon Institute of Technology (HIT). He was elected to Dean of the HIT new Engineering school and nominated as Full Professor. From December 2001 till 2007 Prof. Jacob Gavan served as dean of the engineering faculty and lead the establishment of a MSc program without thesis in Electronic and Communication Engineering which was recognized by the MALAG and includes now around 130 students. Jacob consulted several large Israeli and international companies. He has published over 150 papers shown in his CV "Jacob Gavan" or in Google for Jacob (Jacques) Gavan.

Professor Jacob Gavan is active in URSI Commission E, past Chairman of E9 working group on "Interference in Radio Systems above 30 MHz" and new Co-chairman of E8 working group on "Electromagnetic Compatibility in Wire and Wireless Communication Systems". In 2009 he was nominated co-chair commission E for the inter-commission working group on solar power satellites and as guest editor for the Radio Science Bulletin special issue on High Altitude Platforms. Jacob was also associated editor of the IEEE Transactions on EMC for several years. He was elected as Distinguished Lecturer of the IEEE communication society in 2007 and re-elected till 2010 and as chairman of the student activities in IEEE Israel. From 2008 Jacob founded a new department of communication engineering in Sami-Shamoon college of engineering in the Negev, consult there and teach satellites and space communications. His biography is listed in the International Directory of Distinguished Leadership.