This is to announce Prof. Kavehrad's distinguished lecture tour in the Benelux, organized by the IEEE Benelux Chapter on Communications and Vehicular Technology.
The talks are open to the public. Only for the last talk, you must register by sending an email to Nader Alagha, nader.alagha@esa.int before June 19.

1) June 20, 2017 from 10:00h-12:00h: Ghent University

Location: Jozef Plateau room, Plateau building, Jozef Plateaustraat 22, 9000 Gent
Title of talk: Optical Wireless, Theory and Applications

Abstract: Demands by the communications industry for greater and greater bandwidth push the capability of conventional wireless technology. Optical systems and networks offer a far greater bandwidth. This means new devices and systems have to be developed. Semiconductor Light Emitting Diode (LED) is considered to be the future primary lighting source for buildings, automobiles spacecraft and aircrafts. LED provides higher energy efficiency compared to incandescent and fluorescent light sources and it will play a major role in the global reduction of carbon dioxide emissions, as a consequence of the significant energy savings. Lasers are also under investigation for similar applications. These core devices have the potential to revolutionize how we use light, including not only for illumination, but as well; for communications, sensing, navigation, positioning, surveillance, and imaging. This presentation covers the evolutionary path of the field.

2) June 21, 2017, from 14:00h-16:00h: University of Luxembourg

Location: Room E004, JFK Building 29 Avenue J.F. Kennedy L-1855
Title of talk: Optical Wireless, Theory and Applications
Abstract: see above

3) June 22, 2017, from 13:00h-15:00h: ESA/ESTEC

Location: Newton Conference Room at European Space Agency Technical Research Centre (ESTEC), Keplerlaan 1, Noordwijk, The Netherlands
Title of talk: Multi-Input Multi-Output (MIMO); Potential Applications – Myth and Reality

Abstract: In its relatively short history, research on MIMO communications has reached to a high level of accomplishment with a very rich literature. The great success “STORY” of MIMO in RF communications has certainly motivated the desire of IEEE standards bodies to explore its capabilities in various forms of communications. As communications researchers rush to this potentially promising field, they tend to ignore the many unique properties and constraints of MIMO and start making wishful assumptions. Unfortunately, currently available results for RF communications cannot be applied to practical MIMO links that exhibit their own unique characteristics with underlying different statistical channel models and practical transmission techniques. This seminar is an effort to provide further insights into the performance of single-user MIMO links that ultimately are able to provide the largest achievable capacity, presenting the maximum diversity order achievable through the employment of multiple transmitter/receivers. We further discuss the effect of spatial correlation and demonstrate the necessity of enough transmitter separation and strict requirements to achieve the promised theoretical diversity advantages. Furthermore, we offer examples where the MIMO payoff is not worth the additional hardware costs, today.

Dr. Mohsen Kavehrad, is the W. L. Weiss Professor of Electrical Engineering at The Pennsylvania State University. He is the founding director of the Center for Information and Communications Technology Research. His prior work experience includes working for Fairchild Industries, GTE (Satellite Corp. and Labs.) and Bell Laboratories before joining the Department of Electrical Engineering at University of Ottawa in 1989 as a Professor and Director of Photonic Networks and Systems Thrust in the Communications and Information Technology Ontario (CITO). During 1997-1998 he was also the CTO and a Vice President at Tele-Beam Inc., State College, PA. He has been a senior consultant to NTT, Nortel and AT&T Shannon Research Labs and consultant to a score of other major corporations and government agencies. He is a Fellow of the IEEE. His works have been published in over 350 refereed journal and conference papers, several books and book chapters, and he holds several key issued patents in his work areas.