

**كلية الهندسة والتكنولوجيا**

**دائــرة الهندسة الكهربائية وهندسة الحاسوب**

تتشرف بدعوتكم لحضور محاضرة عامة بعنوان:

**" New Theoritical results for the design of Recursive (IIR) Digital Filters"**

يقدمها

**الدكتور وصفي الكفري**

وذلك يوم الثلاثاء الموافق 24 تشرين أول 2017، في تمام الساعة 2 ظهراً

قاعة الاجتماعات Masri411 (مبنى منيب رشيد المصري)

**Abstract:**

Recursive (IIR) digital filters have a vast range of applications in several areas such as data transmission, image processing, radar, spectroscopy, and digital TV. IIR digital filter constitute basic blocks in digital signal processing. As example it is a basic block of the programmable device ( FBGA ). The design problem of IIR digital filters has been a research topic of great interest for the last three decades. The Seminar reviews existing IIR filter design methods. Moreover, it introduces new theoretical results for the design of the IIR digital filters. The results are treated with the line homotopy and nonlinear approximation theory. The property of convexity and stability of the set of IIR digital filters are revealed. Moreover, the optimal IIR digital filter (simultaneous amplitude and phase design) is characterized by tools of nonlinear approximation, namely Global and Local Kolmogorov criteria. At the end an optimization algorithm is suggested. The Global and Local Kolmogorov criteria constitute stopping conditions for the optimization algorithm.

**Biography**

Dr. Kafri was born in Atteel /Palestine on March 1934. He received his “Diplom. Eng.” in communication (high frequency and electronics) on 1967 and his Dr. Eng. in communication and system theory on 1975 from the Technical University Dresden, Germany.

Dr. Kafri worked for more than two years in TV and mainframe computer industry, Germany. He was a part time staff member at Jordan University between 1976 and 1979. 1979, he worked for one semester at Abu-Dies College of science and technology, which was closed by the Israeli military forces, and all staff members deported to Jordan, in March 1980. Dr. Kafri, joined the academic staff at Najah University until 1981. Since 1981, Dr. kafri is a staff member at Birzeit University, He is now a retired associate professor at the electrical and computer engineering department. During his work at BZU, his interest was in teaching and research. He taught several courses with main interest, communication, electromagnetic, microwave and fiber optics, wireless communication, and information and coding theory.

At the graduate level shared lecturing in the M.Sc program, Scientific computing: Numerical optimization, Cryptography, Information and coding theory

Dr. Kafri was a visiting professor at University of Maryland (USA) supported by Fulbright ,and two times visiting professor at the University of Manchester (GB) supported by the British Royal Society.

Dr. kafri published several papers in the journals: IEEE, Signal Processing ,Multidimensional and signal processing, Digital Signal Processing, and Applied Math. Letters.

**أهلاًوسهلاً**

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