

## One-day course on Cognitive Dynamic Systems by Prof. Simon Haykin

(Supported by "The Royal Academy of Engineering Distinguished Visiting Fellow sponsorship")

Academic and Industrial Researchers and Engineers are invited to submit short abstracts and to present their posters or demo exhibitions during a lunch time session with Prof. Haykin and Fellow Researchers. *Please email indicating your interest (attending the course, presenting a poster or demo, etc.) before August 15th 2010 to [mathini@ieee.org](mailto:mathini@ieee.org) with the subject title of the email "One-day course on Cognitive Dynamic Systems" to secure a place.*

### **Date: September 7<sup>th</sup> 2010**

Time: 9:30- Coffee/Tea

10.00AM -12:00AM –Lectures by Prof. Haykin

12:00AM -1:30PM Lunch (Posters/ Demonstrations and opportunities to meet Prof. Haykin)

1.30PM - 3.30PM – Lectures by Prof. Haykin

3.30PM-5.00PM – Tea/Coffee and Continuation of Posters/ Demonstrations

**Location: ECIT, Titanic Quarter, Queen's University of Belfast, Queen's Road, Queen's Island, BT3 9DT- Belfast- UK**

**About the Course:** The purpose of this course is to discuss the underlying fundamentals of Cognitive Dynamic Systems. Prof. Haykin will communicate his findings and share his experience in the areas of radar and communications research with a 4-hour lecture that will include:

Spectrum estimation for sensing the environment.

The perception-action cycle

Bayesian filtering for estimating the state of the environment.

Dynamic programming for action upon the environment and the Cubature Kalman Filter

Applications of Cognitive Dynamic Systems including Cognitive Radar: Game changer in remote sensing and Cognitive Radio research.

**About the Speaker: Prof. Simon Haykin** B.Sc., Ph.D., D.Sc. F.R.S.C., F.I.E.E.E. received his B.Sc. (First-class Honours), Ph.D., and D.Sc., all in Electrical Engineering from the University of Birmingham, England. Currently, he is the University Professor at Mc-Master University, Hamilton, ON, Canada.

Prof. Haykin is a pioneer in adaptive signal-processing with emphasis on applications in radar and communications, an area of research which has occupied much of his professional life. In the mid 1980s, he shifted the thrust of his research effort in the direction of Neural Computation, cultivating an important field which was re-emerging at that time. All along, he maintained the vision of revisiting the fields of radar and communications with a novel perspective. That vision became a reality in the early years of this century when he brought his innovative perspective to the field resulting in the publication of two seminal journal papers:

"Cognitive Radio: Brain-empowered Wireless communications", which appeared in IEEE J. Selected Areas in Communications, Feb. 2005 and "Cognitive Radar: A Way of the Future", which appeared in the IEEE J. Signal Processing, Feb. 2006.

Cognitive Radio and Cognitive Radar are two important aspects of a much wider and multidisciplinary subject: Cognitive Dynamic Systems, research into which has become his passion.

Prof. Haykin is a Fellow of the Royal Society of Canada, and a Fellow of the Institute of Electrical and Electronics Engineers. He is the recipient of the Henry Booker Gold Medal from URSI, 2002, the Honorary Degree of Doctor of Technical Sciences from ETH Zentrum, Zurich, Switzerland, 1999, and many other medals and prizes.