SEMINAR

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TOPIC	**Circularly Polarized Metamaterial Antennas**
SPEAKER	**Prof. Hisamatsu Nakano from Hosei University, Koganei, Tokyo, Japan**
HOST	**James Kelly**
DATE	**Wednesday 13th of September 2023**
TIME	**16:00 for about 1 hour**
VENUE	**Eng. 2.16 + Online (Click here to join the meeting)**
SYNOPSIS	Circularly polarized (CP) antennas have been receiving considerable attention in response to recent developments in modern wireless communication systems. This seminar speech presents recent progress in three CP metamaterial antennas (metaantennas): (1) metaline antenna, (2) metaspiral antenna, and (3) metacurl antenna. Investigation reveals that straight p-type and n-type metaline antennas exhibit RHCP and LHCP beam-scanning characteristics with change in frequency, respectively. Analysis of a bent metaline antenna finds that it can produce a CP broadside beam. Discussion of metaspiral antenna is directed toward CP beam-scanning capability in both the azimuth and elevation planes. Exploration of metacurl antenna finds that the antenna can be made to radiate an LHCP wave and an RHCP wave, where both have the same maximum gain.
BIOGRAPHY	 **Hisamatsu Nakano** (M'75–SM'87–F'92–LF'11) has been with Hosei University since 1973, where he is currently a Professor Emeritus and a Special-appointment Researcher with the Electromagnetic Wave Engineering Research Institute attached to the graduate school. He has published over 370 articles in peer-reviewed journals and 11 books/book chapters, including Low-profile Natural and Metamaterial Antennas (IEEE Press, Wiley, 2016). His significant contributions are the development of five integral equations for line antennas in free space and printed on a dielectric substrate, the invention of an L-shaped wire/strip antenna feeding method, and the realization of numerous wideband antennas, including curl, metaspiral, metahelical, and Body of Revolution antennas. His other accomplishments include design of antennas for GPS, personal handy phones, space radio, electronic toll collection, RFID, UWB, and radar. He has been awarded 79 patents, including A Curl Antenna Element and Its Array (Japan). He served as a member of the IEEE APS Administrative Committee from 2000 to 2002 and a Region 10 Representative from 2001 to 2010. He received the H. A. Wheeler Award in 1994, the Chen-To Tai Distinguished Educator Award in 2006, and the Distinguished Achievement Award in 2016, all from the IEEE Antennas and Propagation Society. He was also a recipient of The Prize for Science and Technology from Japan's Minister of Education, Culture, Sports, Science and Technology in 2010. Most recently, he was selected as a recipient of the Antenna Award of the European Association on Antennas and Propagation (EurAAP) in 2020. He is an Associate Editor of several scientific journals and magazines, including Electromagnetics.