



Unione Europea



UNIVERSITÀ DEGLI STUDI DI SALERNO
Dottorato Di Ricerca In **Ingegneria Dell' Informazione**
Dipartimento Di Ingegneria Dell' Informazione Ed Ingegneria Elettrica
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AVVISO DI CICLO DI SEMINARI

AKHLESH LAKHTAKIA

Department of Engineering
Science and Mechanics
Pennsylvania State University (USA)

Martedì 23 settembre, ore 15:00 Aula F

Nanoengineered Metamaterials

Morphology and performance are the two faces of the coin called a "nanoengineered metamaterial". Multifunctional performance expected of metamaterials can be engendered by cellular morphology that can be nanoengineered. Their optical and biological functionalities indicate that sculptured thin films exemplify nanoengineered metamaterials.

Giovedì 25 settembre, ore 15:00 Aula 145

Polarization Engineering

Engineering of both the polarization state and the operating frequency band can be accomplished by nanoengineering the morphology of a complex substance such that it is both anisotropic as well as periodic and/or structurally chiral. Three examples show that sculptured-thin-film technology provides opportunities for polarization engineering in specific spectral regimes through nanoengineered morphology.



Akhlesh Lakhtakia was born in Lucknow, India on July 1, 1957. He obtained a Bachelor of Technology degree in Electronics Engineering from the Banaras Hindu University, Varanasi, India in 1979; Master of Science and Doctor of Philosophy degrees in Electrical Engineering from the University of Utah, Salt Lake City in 1981 and 1983, respectively. Thereafter, he joined the faculty of the Pennsylvania State University, where he was elevated to the rank of Distinguished Professor of Engineering Science and Mechanics in January 2004. From 2004 to 2007 he also held the rank of a Visiting Professor of Physics at Imperial College, London. In 2006, he became the Charles Godfrey Binder (Endowed) Professor of Engineering Science and Mechanics. He has published more than 600 journal articles; has contributed 18 chapters to research books and encyclopedias; has edited, co-edited, authored or co-authored 12 books and 8 conference proceedings; has reviewed for 103 journals; serves on the editorial boards of four electromagnetics journals; was the Editor-in-Chief of the international journal *Speculations in Science and Technology* from 1993 to 1995; and became the first Editor-in-Chief of the online *Journal of Nanophotonics* published by SPIE–The International Society for Optical Engineering.



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He served as an international lecturer for the International Commission for Optics and the Optical Society of America; was twice a Visiting Professor of Physics at Universidad de Buenos Aires, a Visiting Professor of Physics at the University of Otago, and a Visiting Fellow in Mathematics at the University of Glasgow; headed the IEEE EMC Technical Committee on Nonsinusoidal Fields from 1992 to 1994; and is a Fellow of the Optical Society of America, SPIE, and the Institute of Physics (UK). He also served as the 1995 Scottish Amicable Visiting Lecturer at the University of Glasgow. He received the PSES Outstanding Research Award in 1996, the PSES Premier Research Award in 2008, and the PSES Outstanding Advising Award in 2005. For his research on sculptured thin films and complex-medium electromagnetics, he received the Faculty Scholar Medal in Engineering in 2005, and a Doctor of Science degree in Electronics Engineering from the Banaras Hindu University in 2006. Nanotech Briefs recognized him in 2006 with a Nano 50 Award for Innovation. The University of Utah made him a Distinguished Alumnus in 2007. His current research interests lie in the electromagnetics of complex materials, sculptured thin films, chiral nanotubes, nanoengineered metamaterials, biomimetics, and negative refraction. At Penn State, he co-developed a course on green engineering for undergraduate engineering students, as well as a course on fundamentals of engineering principles and design for pre-service elementary schoolteachers.

Il seminario è aperto a tutti gli interessati.

I Coordinatori
Prof. Maurizio Longo
Prof. Angelo Marcelli