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**ELECTRICAL & COMPUTER
ENGINEERING**
TEXAS A & M UNIVERSITY

SEMINAR

Room 1035 ETB

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Modern Techniques for Detection of Live Bacteria by

Dr. Peter M Rentzepis
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Abstract: Professor Peter M. Rentzepis' research is the field of ultrafast optical and x-ray research. He has applied picosecond and femtosecond laser techniques to study physical, chemical and biological processes, such as the primary events in vision, electron transfer in photosynthesis, and the structure of metastable species and excited states of solids and liquids... In the past several years Dr. Rentzepis research group has been studying means for effective and fast inactivation of bacteria. At the present there are over 2 million in-hospital patients bacteria causing 20,000 deaths and a cost of over \$ 5B per year. To that effect we have designed and developed a hand held synchronous fluorescence instrument which is capable of recording on a 2D CCD the spectra of live and dead bacteria. After performing principal components analysis the bacteria are identified and the numbers of live and dead bacteria are determined in situ within minutes after their reaction with antibiotics, or radiation.

Dr. Rentzepis received his D. Phil. from The University of Cambridge. He was a member of the research staff and research department head at Bell Labs. Subsequently he was UC Presidential Chair at the University of California. At the present, he is Distinguished TEES Professor at the department of Electrical and Computer Engineering at Texas A&M University and adjunct professor of various universities .He is a member of the US and other countries Academies of Sciences. He has been awarded over 20 scientific national and international awards, has over 500 peer reviewed scientific publications and 84 patents. He has served in Federal, State governments and University committees and in various capacities scientific societies and scientific journals.