Frank Reidy Research Center for Bioelectrics

Seminar Series

Gas plasma-based modulation of intracellular reactive oxygen species

Speaker: Michael Kong, Ph.D.
Center for Bioelectrics
Department of Electrical and Computer Engineering
Old Dominion University

When: 9:00 AM, Tuesday, March 22, 2016
Where: 1st floor conference room, IRP II

Abstract:

Low-temperature ambient-pressure gas plasmas, commonly known as cold atmospheric plasma (CAP), have found many biomedical applications including cancer treatment and wound healing, some of which are already in clinical use. For most such applications, the mode of action of CAP is through their reactive oxygen species (ROS) to modulate cellular metabolism. A key challenge is to establish a quantitative relationship between ROS generated in CAP and CAP-induced ROS inside a cell. This seminar reviews the progress made by our group and others in pursuit of a quantitative description of how gas plasmas interact with cells.

Biosketch:

Trained as an electrical engineer (PhD, University of Liverpool, 1992) with experience in free electron lasers, optical sensors, and switchgear arc plasmas, plasmas, Dr Kong's main scientific contributions are in the area of cold atmospheric pressure plasmas and their interaction with cells and tissues. He received the inaugural International Society for Plasma Medicine Prize in 2010 and the IEEE Nuclear and Plasma Science Merit Award in 2015. He has published over 170 peer-reviewed journal papers with an h-index of 42 (Web of Science), and he organized the 2012 IEEE International Conference on Plasma Science with some 580 participants.