Abstract Submitted
for the GEC15 Meeting of
The American Physical Society

Effects of atmospheric pressure non-thermal plasma treatments on aflatoxigenic fungi and its host BO-CHEN CHEN, Institute of Space And Plasma Science, NCKU — This experiment tests the ability of atmospheric pressure non-thermal plasma treatments in the prevention of fungi infection. There are charged particles, electric field, radicals and UV light inside plasmas and these elements might trigger different physical or chemical effects during non-thermal plasma treatments. In this experiment, the experimental samples received indirect plasma treatments with different time duration and gas compositions which mean only the remote effects caused by plasma treatments could be seen. In this work, plasmas were produced by dielectric barrier discharge method. The operation gases were air and a mixed gas of 97% He and 3%O_2. After plasma treatments, fungi growth rate was observed by taking pictures and the existence of aflatoxin was qualitatively detected by black light method. The final results show that the radicals in both He/O_2 and air plasma might facilitate fungi growth rate which means peanuts received indirect plasma treatments grew fungi faster than control group. The outcomes of aflatoxin detection also shows that the fungi grown on all the sample are aflatoxigenic fungi.

Bo-Chen Chen
Institute of Space And Plasma Science, NCKU

Date submitted: 16 Jun 2015 Electronic form version 1.4