ANSYS

The Center for Advanced Engineering & Research

Electromagnetics Simulation Seminar
May 20, 2014 – Lynchburg, VA

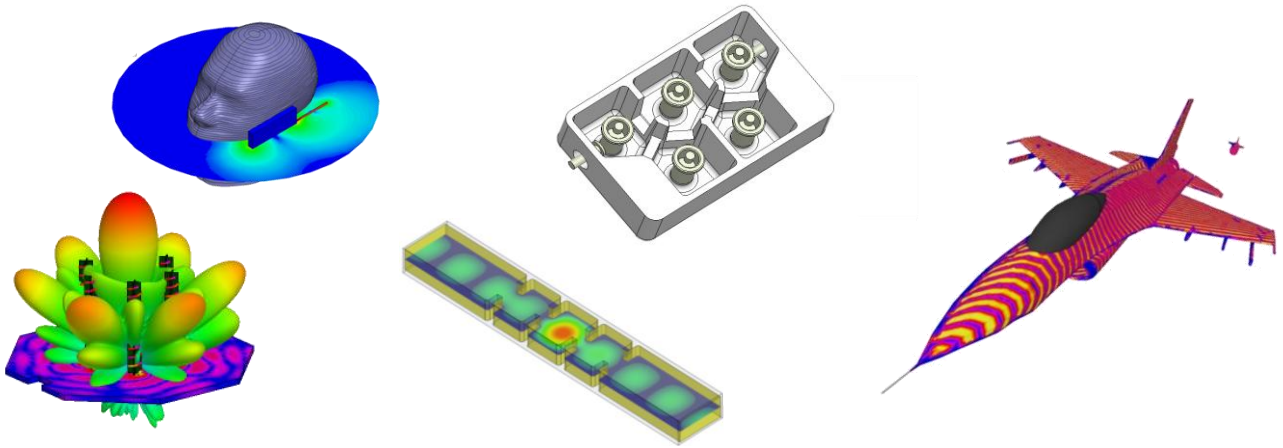
Click Here to Register

By enabling engineers to model the key components of on-chip embedded passives, IC packages, PCB interconnects, antennas, RF/Microwave components and biomedical devices both individually and as a system, simulation technology greatly accelerates the design process, optimizes performance, and minimizes costs associated with physical prototyping and testing.

Join us for a free ½ day seminar on May 20 featuring ANSYS electromagnetic simulation software and industry experts. Simulation topics such as bi-directional electro-thermal applications, short range wireless channel analysis, wireless power transfer, and antennas systems will be covered as well as a filter design and simulation presentation from AMTI.

Location:
The Center for Advanced
Engineering & Research
1173 Research Way
Forest, VA 24551

Time: 8:30 AM - 1:00 PM



Time	Title	Abstract
8:30 – 9:00	***Registration / Continental Breakfast***	
9:00 – 9:15	**Welcoming and Introduction** by Fred Phillips, ANSYS	
9:15 – 9:45	**Short Range Wireless Channel Analysis** By Jim Delap, ANSYS	Electromagnetic design tools are accepted as part of the design process for wireless component products. System design tools are utilized for effective range, BER, SNR, and other macro-scale parameters. Rarely are the two combined, but when they are, the designer can gain tremendous insight into environmental effects upon wireless components. This presentation will examine the entire channel from components to propagation environments, and see how ideal performance degrades with real world factors.
9:45 – 10:15	**Bi-Directional Electro-Thermal Application** By Jim Sherman, ANSYS	In today's electronic product design environment, there is no such thing as designing solely for electrical performance or thermal performance. In many cases, the electronic design is going to cause thermal problems that need to be managed. In years past, these two separate design teams have usually made gross estimates for power densities and current capacity to facilitate some level of collaborative design. This usually leads to over-engineering that ends up increasing the overall design cost. Coupling the electronic design flow to the thermal design flow, with feedback, allows both teams to operate efficiently to optimize performance for both disciplines simultaneously. This presentation will go over the workflow, and illustrate with examples.
10:15 – 10:45	**Wireless Power Transfer** By Jim Delap, ANSYS	The concept of delivering energy wirelessly is not a new one. For many years, products have been on the market utilizing such systems, such as cordless phones and toothbrushes. These systems are transferring relatively small amounts of energy over very small distances. To scale up these systems requires much more detailed modeling of the components and environment. Wireless Power Transfer (WPT) systems are taking these ideas and applying them to problems such as that of charging electric vehicles, and other electronic components. This presentation will summarize the different types of WPT systems, and also illustrate some of the multi-physics design challenges associated with realizing them.
10:45 – 11:00	***Break***	

Time	Title	Abstract
11:00 – 11:30	**HFSS Design Flow at AMTI** By John Lane & Lee Todd, AMTI	RF and microwave filter design has provided many interesting design challenges lately due to the wide range of technologies required to fill the needs of the recent reallocation and auctioning of frequency bands. Traditionally, these filter designs have been developed in industry through multiple prototypes, hand tuning, and extensive testing. This ultimately leads to the added expense of complex process flows, labor, material costs, and re-tooling. Equally if not more importantly, customer delivery times are shrinking: Many filter requests are now to fix existing problems, rather than for initial design-in. In the last year, AMTI has started to incorporate ANSYS HFSS into its design flow to augment established practices traditionally used in filter design. ANSYS HFSS is a 3D electromagnetic software design tool that includes the capability to provide a virtual workspace to construct, tune, and design filters for manufacture.
11:30 – 12:00	**Antenna Systems Overview** By Jim Sherman, ANSYS	The ANSYS HFSS license now offers antenna designers a user-friendly end-to-end solution. Optimize the design of a single antenna element in HFSS's traditional mechanical CAD interface, and analyze the performance of finite arrays in a fast and efficient manner with domain decomposition. For the feed network, take advantage of a stackup-based GUI as well as HFSS's most efficient settings for planar geometries by setting up and solving layered models in HFSS Layout. Users can push the excitation from the feed network into the antenna array for the full system solution in circuit with a Linear Network Analysis solve. This complete end-to-end workflow is now available with one HFSS license.
12:00 – 1:00	***Lunch (provided)***	
1:00 -	***Tour of the CAER Facility - Optional***	

Questions?

Please contact Fred Phillips at 540.904.6073 or fred.phillips@ansys.com