

SDC 11	
Title:	Novel Application of EM Field Simulators
MTT-S Technical Committee and Industrial Sponsors:	<ul style="list-style-type: none"> - MTT-15 (Microwave Field Theory)
Competition Coordinator(s):	David R. Jackson (djackson@uh.edu)
Description:	<p>MTT-15 is pleased to sponsor a student design contest on Novel Application of Electromagnetic Field Simulators in Microwave Engineering Education. The objectives of this competition are to encourage students to:</p> <ul style="list-style-type: none"> - understand the functionalities and characteristics of electromagnetic field simulators, - know the strengths and weaknesses of the underlying numerical methods, and - use the software creatively to illustrate electromagnetic field behavior in microwave engineering education. <p>Please contact Prof. Jackson for more information on this competition.</p>
Design Specifications:	<p>Contestants are to design a set of virtual experiments to illustrate the field behaviors and operating principles exhibited in practical microwave devices. In particular, the experiments must consist of visualizations that illustrate the fundamental operating principles of the following basic microwave devices:</p> <ul style="list-style-type: none"> ▪ transmission line propagation and reflection ▪ rectangular waveguide propagation and attenuation ▪ 90° quadrature coupler ▪ rat-race hybrid coupler ▪ three-port circulator. <p>Hence, a total of five virtual experiments are needed.</p>
Evaluations Criteria:	<p>The winning project will be selected by the MTT-15 committee. Projects will be judged based on creativity and contribution to the educational process. The following tentative scoring criteria will be used:</p> <ul style="list-style-type: none"> - 25% — Creativity - 25% — Contribution to the educational process - 25% — Quality of display (poster and possible electronic display) - 25% — Quality of oral presentation during Symposium

	Criteria 1 and 2 will be evaluated in advance. The quality of the display and the oral presentation will be judged at the conference (open-forum format).
How To Participate:	<ul style="list-style-type: none"> - Submit an entry form (http://ims2012.mtt.org/en/Studentdesigncompetition) to the coordinator (djackson@uh.edu) and the Student Design Competition chair (Student_Designcompetition@IMS2012.org) by Saturday 31 March 2012. - Teams of up to three student members are allowed. - Design proposals describing the virtual experiments are due by 31 March 2012. - Proposals must clearly describe all of the features that are designed to illustrate the fundamental educational principles related to the microwave devices. Participants are encouraged to be creative. All commercially available field simulators, freeware and open-source simulators are allowed. Custom simulation software developed by the students is welcome as well, but in this case the software must be public domain so that MTT-15 can freely distribute it to the public. (Some or all of the projects may be placed on the MTT-15 website for public use.) - Proposals with a high level of creativity and contribution to the microwave engineering educational process will be selected. - Notifications of acceptance will be sent out by 16 April 2012.
Awards:	The winning team will receive a prize of \$2,000 (USD) and will be invited to submit a paper describing the design for Microwave Magazine.
Important Dates:	<ul style="list-style-type: none"> - Saturday 31 March 2012: Last day to submit design proposals and entry forms - Monday 16 April 2012: Notification of acceptance - Tuesday 19 June 2012: Competition at IMS 2012