UNIVERSITA' DI PAVIA

Scuola di Dottorato in Scienze dell'Ingegneria

DOTTORATI DI RICERCA IN

- **MICROELETTRONICA**
- **INGEGNERIA ELETTRONICA, INFORMATICA ED ELETTRICA**

AVVISO DI SEMINARIO

Oscillator and active antenna design in Substrate Integrated Waveguide (SIW) technology

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Substrate Integrated Waveguide (SIW) technology, since its initial appearance in the literature, has stimulated numerous novel microwave and millimeter wave circuit design and optimization efforts due to its potential for high performance, compact topology, and low cost manufacturing capability. This presentation focuses on nonlinear circuit design and more specifically oscillator design efforts utilizing SIW technology. Research efforts that have appeared in the literature in relation to oscillator and self-oscillating mixer design will be presented, followed by nonlinear analysis and design methodologies that combine harmonic balance and EM simulation to trace the various existing steady state solutions. Active oscillator antenna implementations will be shown that allow for single substrate, compact, cavity backed slot and patch antenna topologies. The cavity backed topology allows one to resolve potential heat dissipation problems, and, additionally, a means to improve the phase noise performance of the oscillator. Finally, design efforts related to coupled oscillator antenna arrays in SIW technology will be shown, demonstrating the capability for power combining array as well as phased array implementations.

Giovedì 25 Marzo 2010, ore 11:00
Aula Seminari Dipartimento di Elettronica – Piano D

I dottorandi e tutti gli interessati sono cordialmente invitati.

L'organizzatore

Ing. M. Bozzi

I coordinatori dei dottorati

Proff. Maloberti e Degiorgio