

SEMINAR: **Design and Applications of Integrated Operational Amplifiers**



Presenter: **Charles Parkhurst**

Texas Instruments Senior Analog IC Designer, Senior Member of the Technical Staff (SMTF)

DATE: September 23, 2014 6:30 – 8:30 pm

PLACE: University of Puerto Rico, Mayaguez Campus
Stefani Building, Auditorium S-113

Abstract:

The design of integrated operational amplifiers (OA) for specific applications or for applications within a certain range of operational conditions depend heavily on system level requirements that are associated to the target application. Hence, although theoretically the usage of OA follow similar rules and system level design steps, the specifications of the OA at the transistor level design must comply with different ranges of response characteristics. These differences give rise to the classification of Operational amplifiers depending on the particular needs, such as low voltage low power OA's, high-speed OA's, low-noise OA's, etc. This seminar focuses on the design path that follows the designer in the process of Operational amplifier design to comply with the system level requirements. Practical examples from the presenter's portfolio will serve to illustrate this process.

Biographical Notes:

Charles joined Texas Instruments in 1998 as the first undergraduate COOP from the University of Puerto Rico, Mayaguez Campus. During his COOP he worked for the High Speed Amplifier team which later hired him as a full time Analog IC Designer in the year 2000. He was promoted to MGTS in 2004 within the High Performance Analog organization for his technical contributions in analog circuit design. In 2005 he was promoted to Design Manager of the Test & Measurement organization where he led both design and characterization teams. Later, in 2008, he joined the Medical and Hi Reliability organization as a Senior Analog IC Designer. In this organization he developed a new design strategy for the Hi Reliability Product Line that included design of analog ICs for extreme environments such as space and high temperature. He got promoted to SMTS in 2011 for his outstanding technical contributions within High Performance Analog. Currently Charles is the lead designer of another new design strategy where he is leading/developing complete mixed signal solutions for the Hi Reliability Industrial Smart Sensor market. Charles earned his BSEE from the University of Puerto Rico in the year 2000. He has been granted 12 patents and has 5 more pending, in the field of analog IC design. He has dictated several seminars to students, university professors and professional engineers. He has also authored several papers and publications for a number of internal and external conferences. Charles has been a key

member of the University of Puerto Rico recruiting team and responsible for scouting for the most talented Latin engineers for Texas Instruments in the last 12 years.