

## The Analog Designer's Toolbox (ADT): Towards A New Paradigm for Analog IC Design

<b>Date:</b>	Tuesday, February 16, 2021
<b>Time:</b>	02: 00 PM – 02: 45 PM
<b>Location:</b>	<a href="#">ONLINE CLICK HERE</a>
<b>Meeting ID:</b>	974 8264 0763
<b>Passcode:</b>	162442

### Speaker:

**Dr. Hesham Omran**

Assistant Professor

Ain Shams University, Egypt.

### Abstract:

The integrated circuit (IC) technology has witnessed an exponential advancement in the last decades, and has changed every aspect in our life. However, the analog IC design flow has almost unchanged since the introduction of Berkeley SPICE in the 1970s, posing many challenges to the design of complex systems. The Analog Designer's Toolbox (ADT) is a new analog EDA tool that defines a new paradigm in analog IC design. ADT provides a turnkey solution that enables everyone to reap the benefits of the gm/ID design methodology powered by precomputed lookup tables (LUTs). At the device level, ADT Device Xplore gives an easy interface to plot arbitrary design charts involving complex expressions. You can explore your devices from different technologies at different corners and temperatures and take second-order effects into consideration. At the block level, ADT Design Xplore gives you the power of design space exploration, constraints management, live tuning, and optimization, all in a single cockpit without invoking your simulator. Moreover, with a single click ADT builds the testbenches for you and reports the results from your favorite simulator. We designed ADT to help you be more productive, to make the design process more systematic, to make your designs more optimized, and to make your job more fun!

### Bio:

**Dr. Hesham Omran** received the B.Sc. (with honors) and M.Sc. degrees from Ain Shams University, Cairo, Egypt, in 2007 and 2010, respectively, and the Ph.D. degree from King Abdullah University of Science and Technology (KAUST), Saudi Arabia, in 2015, all in Electrical Engineering. From 2008 to 2011, he was a Design Engineer with Si-Ware Systems (SWS), Cairo, Egypt, where he worked on the circuit and system design of the first miniaturized FT-IR MEMS spectrometer (NeoSpectra), and a Research and Teaching Assistant with the Integrated Circuits Lab (ICL), Ain Shams University. From 2011 to 2016 he was a Researcher with the Sensors Lab, KAUST. He held internships with Bosch Research and Technology Center, CA, USA, and with Mentor Graphics, Cairo, Egypt. In 2016, he rejoined the ICL, Ain Shams University, as an Assistant Professor.

Dr. Hesham has developed and taught several advanced courses on Analog IC Design, Computer-Aided Circuit Design, Analog Integrated Systems Design, CMOS Data Converters, RF Circuit Design, and Digital IC Design. He delivered these courses to undergraduate students, graduate students, and professional engineers in several institutes and companies inside and outside Egypt. Most of these courses are available on the Mastering Microelectronics YouTube channel for free.

Dr. Hesham has received several awards including Egypt's State Encouragement Award for Engineering Sciences in 2019, best paper award from the IEEE International Design and Test Conference in 2009, and Academic Excellence Awards from KAUST and Ain Shams University in 2011 and 2002, respectively.

Dr. Hesham has published 40+ papers in international journals and conferences. He serves as a reviewer for several international journals and conferences including IEEE Transactions on Circuits and Systems (TCAS) I & II, IEEE Transactions on Instrumentation and Measurement, IEEE Transactions on Very Large Scale Integration Systems (TVLSI), the International Journal of Circuit Theory and Applications (IJCTA), and IEEE International Midwest Symposium on Circuits and Systems (MWSCAS). His research interests are in the design of analog and mixed-signal integrated circuits, and especially in analog and mixed-signal CAD tools and design automation.

