

**Prof. Mansun Chan Distinguished Lecture**  
**Łukasiewicz Research Network – Institute of Electron Technology, May 21, 2019**

The Mansun Chan Distinguished Lecture "Simulation and Modeling of Dynamic Systems with Time Varying Device Characteristic" was held on May 21, 2019 in the Łukasiewicz Research Network – Institute of Electron Technology (Łukasiewicz ITE), Warsaw, Poland. Approximately 15 persons from ITE and from abroad, coming to Warsaw for the ESSDERC paper selection meeting, attended the lecture.

The abstract of the Distinguished Lecture: The existing circuit simulation methodologies are based on time-invariant device models, electrical characteristics and parameters of which do not change over time. However, more recently, many new applications such as neuromorphic computing or artificial neural-network circuits require the use of devices with history dependent behavior. Due to such a behavior different from traditional transistors, which are the focus for the compact modeling community, a new approach to monitor the time dependent characteristics of these devices is necessary. In addition, a new simulation methodology is also required to predict the behavior of such system efficiently. In the presentation, a new approach to simulate dynamic systems was introduced. The proposed approach combined with the modification of simulation flow and compact model construction was introduced. The approach is very general and can be used to cover a wide class of devices with dynamic behavior such as memory function or device performance degradation during a prolonged operation.



Photo: Prof. Mansun Chan giving a Distinguished Lecture in ITE, Warsaw, May 21, 2019.