Sustainable Semiconductor Facility Management in Taiwan
By
Professor Luh-Maan Chang, National Taiwan University

Abstract:
To advance semiconductor technology, facility is part of and prerequisite to semiconductor manufacturing. Because of the extremely controlled environment and ultrapure utilities needed for semiconductor fabrication, the facility consumes a lot of energy and water resource that aggravate the shortage problems of natural resources and furthermore affect global warming and ecosystems. Therefore, how to sustainably manage the use of energy and water resource in semiconductor fab becomes critical. There are many sustainable facility management technologies have been developed worldwide for solving the problems. Moreover, they have been efficiently employed in many advanced fabrication plants (fabs) of Taiwan lately. The presentation will begin with a brief review of semiconductor fab facilities after the process of making semiconductor is introduced. Then, those facilities management and technologies that advance the semiconductor manufacturing in Taiwan will be pointed out. Finally, a typical TSMC fab will be used to exemplify the advanced facility management technologies.

Speaker:
Professor Luh-Maan Chang got his BS degree from Department of Civil Engineering, National Cheng-Kung University in 1971. In 1974-77, Professor Chang worked as a project engineer for Industry Technology Research Institute (ITRI) at Hsing-Chu, the silicon valley of Taiwan where he helped design and build the 1st Integrated Circuit Demonstration Plant of Taiwan. After getting his MS and PhD degrees from the University of Texas at Austin, he taught in the School of Building Construction, University of Florida from 1983 to 1985. From 1986 to 2009, Professor Chang taught in the School of Civil Engineering, Purdue University. After he took early retirement from Purdue, he continued teaching in the Civil Engineering Department of National Taiwan University till 2016. Presently, he is a full-time researcher in Climate Change and Sustainability Research Center and an adjunct professor of National Taiwan University. His current research interests are in Contamination Control for below 5nm Semiconductor Manufacturing, Crucial Fab Facility Technologies for 450mm (18") Wafer Fab, and 4D Construction Project Scheduling through Fab/Facility Information Modeling (FIM).

Chairperson: Assoc/Prof Tiong Lee Kong, Robert
Date: 29 March 2017 (Wednesday)
Time: 2.30pm to 4.00pm (Lecture with Q&A)
Venue: CEE Seminar Room A, Block N1, N1-B1b-06
School of Civil and Environmental Engineering (CEE), Nanyang Technological University

Online Registration: [https://wis.ntu.edu.sg/pls/webexe/REGISTER_NTU.REGISTER?EVENT_ID=OA17032408550723](https://wis.ntu.edu.sg/pls/webexe/REGISTER_NTU.REGISTER?EVENT_ID=OA17032408550723)
Free Admission and Limited Seats!
Registration Closing Date: Tuesday, 28 March 2017, 5.30pm
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