

Prof. Wen-Yih Chen 陳文逸

Distinguished Professor, 特聘教授

Department of Chemical and Materials Engineering

Institute of Systems Biology and Bioinformatics

National Central University, TAIWAN



**Title:**

Developments of DNA oligonucleotides with site-specific methyl-phosphotriester linkages for molecular detections and precision medicine

**Abstract:**

Precision medicine is to overcome the “averaged” medical paradigm that has been practiced for decades. To illuminate meaningful translational information out of the intrinsically complicated of a biological system created an unprecedented demand for an ultrahigh throughput biosensor with capability of providing big data information. The developments of microarray and NGS, with the help of systems biology and bioinformatics, steps closer to a more precise translational approach for diseases, including cancers. Further development of a next generation biosensor is indeed needed. With the help from semiconductor's dimension and the newly developed DNA derivatives, we could mitigate the gap we have to realize precision medicine and companion diagnosis.

Dr. Wen-Yih Chen is currently a Distinguished Professor in the Department of Chemical and Materials Engineering and Institute of System Biology and Bioinformatics, National Central University (NCU). He was the Chairman of the Department and was the Associated Dean of the Engineering School of NCU. He also was a visiting Professor of MIT, Monash University and U. of Washington, Seattle. His research emphases have been on understanding the thermodynamics and kinetics between biomolecular interactions. With the principle understanding of the molecular interactions, he has successfully elucidated some biochemical separations and protein folding disease phenomena in molecular level. Currently, he has devoted his research resources in biosensor development,

especially in gene sequencing and biomarkers detection by Field Effect Transistor and Surface Plasmon Resonance. He has published more than 150 peer review papers and owned more than 45 patents, mostly in biosensor area. He is currently on the editorial board of Biotechnology Journal (SCI), Bioprocess and Bioengineering (SCI) and Atomic and Molecular Physics (SCI). He is one of the founders of a newly established company, Helios Bioelectronics Inc., Taiwan.