

## 10<sup>Th</sup> Khwarizmi International Award

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**Researcher:** Erkrang Wang

**Research Title:** Some new aspect of the basic research on electroanalytical chemistry

**Rank:** First

**Field:** Chemical Technologies

**Country:** China



Briefly introduce some new progress dealing with electroanalytical chemistry :

- 1- Surface modification and characterization chemically modification electrode (CME), especially organic conducting polymer CME, mixed valence CME, prophyrin CME and polyacid CME and their ultramicro CME and so on which have been characterized by various electrochemical and physical methods like FTIR, Raman, ESR, NMR, ESCA, MS, SEM & SPM.
- 2- Spectroelectrochemistry , mainly in-situ including UV, VIS, IR,& FTIR, ESR, Roman and ECSPM, and also analytical Spectroelectrochemistry to study for adsorption and desorption, orientation, thermodynamics and kinetic, mechanisms of electrode process intermediates.
- 3- Bioelectrochemistry including direct electrochemistry of redox proteins and enzymes and determination of biomaterial substance like neurotransmitters, vitamins, antibiotics and anesthetics etc.
- 4- Electrochemical sensors include potentiometric and amperometric sensors studied.
- 5- The scanning tunneling microscope (STM) as well as atomic force microscope can be used with conducting and semiconducting substrate as well as non-conducting substrate to obtain information about surface topography with high resolution on the nanoscale and in favorable case the atomic level.

Dr. Wang was born in 1933 in China. He received his B. S. in 1952 from the University of Shanghai, Ph.D. in 1959 from Czechoslovak Academy of Sciences in Prague.

He is the member of the Third World Academy of Sciences (TWAS) and national member of the Chinese Academic Degree Commission of Chemistry. He was the standing director of the Chinese Chemical Society and chairman of the analytical chemistry commission for eight years. He was the president of Changchun Chemical Society (1986-1994) and is the president of Jilin Provincial Chemical Society (1995- ).

He has published more than 370 papers in the field of electrochemistry and analytical chemistry which most were published in international journals in English.