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## Cathodic polarization test coupled with quartz crystal microbalance to investigate the deposition mechanism of Cisplatin on titanium

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To reduce the side effects of chemotherapy, target therapies have been spotlighted. In this study, Cisplatin, the drug for cancer treatment, is electrochemically deposited on titanium alloy as vascular stents for the tumor localized therapy by sustaining drug releasing to achieve the cancer cells apoptosis or the prevention of cancer metastasis. Coupled with quartz crystal microbalance, the cathodic polarization tests were conducted to speculate the deposition mechanism of Cisplatin on titanium, the field emission scanning electron microscope and Fourier transform infrared spectroscopy to observe the surface morphology and analyze constituent elements, respectively. A UV visible spectrometer was used to measure drug loading and releasing. It is concluded that the Cisplatin can be successfully deposited on titanium with drug 62.99  $\mu\text{g}/\text{cm}^2$ , by exchanging  $\text{Cl}^-$  ions which is originally bonded on Cisplatin with  $\text{OH}^-$  ions, is produced by the electrochemical method, finally to form strong hydrogen bonds and attract one another.

### Biography

Shiow-Kang Yen has completed his PhD from National Tsing Hua University, Taiwan. He was the Director of Department of Materials Science and Engineering, National Chung Hsing University. He was awarded with the Outstanding Researcher award at National Chung Hsing University in 2004. He has published more than 70 papers in reputed journals.

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