Department of Chemical Engineering

呂世源 教授

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- B.S.Ch.E. National Taiwan University, ROC, 1983
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主要研究領域

• 奈米材料與結構

我們的研究興趣在於奈米材料與結構之製備、檢測與應用。我們以多種不同的方式(電化學沉積、溶凝膠、水熱法、熱溶劑法等)將各式物質(半導體、金屬、陶瓷及高分子)以多種形式(介孔、片、線、棒、管、粒子、陣列及複材)製備出來,並討論它們在電催化分解水產氫及電化學儲能上之應用。

Main Research Interests

Nanomaterials and nanostructures

We are interested in nanomaterials and nanostructures of a wide variety of substances (semiconductors, metals, ceramics, and polymers) in a wide range of form (mesoporous, sheet, wire, rod, tube, particle, array and composite) prepared via a number of different routes (electrochemical deposition, sol-gel, hydrothermal, solvothermal, etc.) for potential applications in electrocatalytic water splitting and electrochemical energy storage.



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- Duraisamy Senthil Raja, Xui-Fang Chuah, <u>Shih-Yuan Lu</u>*, 2018, "*In situ* Grown Bimetallic MOF as Highly Efficient Bifunctional Electrocatalyst for Overall Water Splitting with Ultrastability at High Current Densities," *Adv. Energy Mater.*, **8**, 1801065.
- Duraisamy Senthil Raja, Hao-Wei Lin, and <u>Shih-Yuan Lu</u>*, 2019, "Synergistically Well-Mixed MOFs Grown on Nickel Foam as Highly Efficient Durable Bifunctional Electrocatalysts for Overall Water Splitting at High Current Densities," *Nano Energy*, **57**, 1-13.
- Hao-Wei Lin, Duraisamy Senthil Raja, Xui-Fang Chuah, Cheng-Ting Hsieh, and <u>Shih-Yuan Lu</u>*, 2019, "Bi-metallic MOFs Possessing Hierarchical Synergistic Effects as High Performance Electrocatalysts for Overall Water Splitting at High Current Densities," *Appl. Catal. B. Environ.*, 258, 118023.
- Chao-Nan Lv, Lei Zhang,* Xin-Hua Huang, Yuan-Xin Zhu, Xin Zhang, Jin-Song Hu, and <u>Shih-Yuan Lu</u>*, 2019, "Double Functionalization of N-doped Carbon Carved Hollow Nanocubes with Mixed Metal Phosphides as Efficient Bifunctional Catalysts for Electrochemical Overall Water Splitting," *Nano Energy*, 65, 103995.



