

周更生 教授

KAN-SEN CHOU, PROFESSOR

- 國立台灣大學 學士，民國六十一年
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- B.S. National Taiwan University, ROC, 1971
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主要研究領域

粉粒體技術以及無機材料製程與應用，為本人主要的研究領域。近年來的主題則著重於奈米粒子的合成及其應用。具體而言，包括以下幾項：

■ 奈米金屬微粒及絲的合成

例如銀，銀銅合金，鎳及鐵等微粒，以化學法為主，探討微粒粒徑，絲的尺寸與安定性控制，期得到高濃度，高純度，窄直徑的奈米金屬微粒或絲，以利後續應用；亦嚐試合成核殼結構，增廣應用範圍。

■ 奈米金屬微粒及絲應用

例如製成奈米銀墨水，用於噴墨製作導電線路；奈米銀之觸媒應用；以噴墨技術搭配多種奈米粒子製作電子元件；奈米鐵之電極材料製作鎳鐵電池等。

Main Research Interests

Powder technology and inorganic materials processing and applications are the main research interests of this lab. In recent years, the focus is on the synthesis of nano-metallic particles and their applications.

■ synthesis of nanosized metallic colloids and wires

such as silver, silver/copper alloy, nickel and iron; hope to control colloidal and wire size and stability; also include ways to obtain core-shell nanosized particles for wider applications.

■ applications of nanosized colloids and wires

e.g. to prepare silver ink and using it in inkjet printer to obtain conducting circuits; catalytic application of nano-silver particles and wires; use of inkjet printing technique in association with several nanosized colloids to fabricate electronic devices; nano-iron colloids as electrode materials for NiFe batteries.

代表作 (Selected Publications)

- **KS Chou**, HL Liu, LH Kao, CM Yang, SH Huang, "A quick and simple method to test silica colloids' ability to resist aggregation," Colloids and Surfaces A: Physicochemical and Engineering Aspects, 48, 115-118, 2014.
- YH Chang, YC Lu, **KS Chou**, "Enhancement of photoluminescence of different quantum dots by Ag@SiO₂ core-shell particles. Materials Research Bulletin", 48, 2076-2078, 2013.
- **KS Chou**, MY Lin, HH Wu, "Studies on the removal of 2-propanol by Ag@Fe₂O₃ core-shell structured catalyst," Journal of the Taiwan Institute of Chemical Engineers, 44, 228-232, 2013.
- **KS Chou**, YC Chang, LH Chiu, "Studies on the continuous precipitation of silver nanoparticles. Industrial & Engineering Chemistry research", 51(13), 4905-4910, 2012.
- YH Chang, YC Lu, **KS Chou**, "Diameter control of silver nanowires by chloride ions and Its application as transparent conductive coating," Chem. Lett., 40(12), 1352-1353, 2011.
- CK Kao, YR Tsai, **KS Chou**, "Synthesis and characterization of the iron/copper composite as an electrode material for the rechargeable alkaline battery," J. Power Sources, 196 (13), 5746-5750, 2011.