

**CHENGKUN XU**

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US permanent resident

**OBJECTIVE:** R&D position that utilizes my experience in electroplating, electrochemistry, and material characterization.

**SUMMARY OF QUALIFICATIONS:**

- ◆ Five years of experience in electroplating, electroless plating, and wet chemical processes.
- ◆ Expert knowledge of electrochemistry, material science, and analytical chemistry.
- ◆ Hands-on skills in materials characterization and electrochemical methods.

**WORK EXPERIENCE:**

- ◆ **Department of Chemical Engineering, Material Science and Engineering, University of California Los Angeles, Los Angeles, California** 2001-2003

Postdoctoral Researcher

Developed electroplating of magnetic SmCo thin film for MEMS application. Investigated the bath chemistry and operating parameters. Achieved an increase in the deposit Sm content and excellent hard magnetic property.

Developed electroless nickel plating into porous silicon with aspect ratio 200 for chip metallization. Fabricated porous silicon by electrochemical etching. Achieved a complete deposition of nickel deposit into the pores all the way down to the bottom.

- ◆ **Department of Chemistry, Duquesne University, Pittsburgh, Pennsylvania** 2003-2006

Postdoctoral Researcher

Synthesized nanoscale carbon-modified TiO<sub>2</sub> thin film, particles, and nanotube arrays for photoelectrochemical water splitting.

- ◆ **Department of Chemical Engineering, University of Pittsburgh, Pittsburgh, Pennsylvania**

Research Associate

2007- present

Developed and Synthesized ZnO nanowire and TiO<sub>2</sub> nanotube arrays and apply them in dye-sensitized and polymer solar cells.

- ◆ **Department of Chemistry, Northeastern University, Shenyang, PR China**

Ph.D student and Associate Professor

1995-2001

Developed and investigated electrodeposition of amorphous nickel-tungsten alloy and cobalt. Conducted electrochemical characterization.

Taught electrochemistry and its characterization technique course at the graduate level.

Trained graduates in electrochemical techniques.

**EDUCATION**

**Northeastern University (NEU), Shenyang, PR China.**

Ph.D. in Chemical Engineering, 2000

M.S. in Chemical Engineering

B.S. in Chemistry

## SELECTED PUBLICATIONS

1. Chengkun Xu, Paul Shin, Liangliang Cao, and Di Gao, Preferential Growth of Long ZnO Nanowire array and Its Application in Dye-Sensitized Solar Cells. *J. Phys. Chem. C*, **2010**, *114*, 125–129.
2. Chengkun Xu, Paul H. Shin, Liangliang Cao, Jiamin Wu and Di Gao, Ordered TiO<sub>2</sub> Nanotube Arrays on Transparent Conductive Oxide for Dye-Sensitized Solar Cells. *Chem. Mater.* **2010**, *22*, 143 - 148.
3. Chengkun Xu, Mingheng Li, Xi Zhang, King-Ning Tu, and Ya-hong Xie, Theoretical Studies of Displacement deposition of Nickel into Porous Silicon with Ultrahigh Aspect Ratio, *Electrochimica Acta*, **2007**, *52*, 3901-3909.
4. Chengkun Xu, Xi Zhang, King-Ning Tu, and Ya-hong Xie, Nickel Displacement deposition of Porous Silicon with Ultrahigh Aspect Ratio, *Journal of Electrochemical Society*, **2007**, *154*, D170-D174.
5. Chengkun Xu, and S. U. M. Khan, Photoresponse of Visible Light Active Carbon Modified (CM)-n-TiO<sub>2</sub> Thin Films, *Electrochemical and Solid-State Letters*, **2007**, *10*(3) B56-B59.
6. Chengkun Xu, Yasser A. Shaban, William B. Ingler Jr., and Shahed U. M. Khan, Nanotube Enhanced Photoresponse of Carbon Modified (CM)-n-TiO<sub>2</sub> for Efficient Water Splitting, *Solar Energy Materials and Solar Cells*, **2007**, *91*, 938–943.
7. Chengkun Xu, and S. U. M. Khan, Enhanced Carbon Doping of n-TiO<sub>2</sub> Thin Films for Photoelectrochemical Water Splitting, *Electrochemistry Communication*, **2006**, *8*, 1650-1654.
8. Chengkun Xu, and S. U. M. Khan, Photocatalytic Effect of Carbon Modified n-TiO<sub>2</sub> Nanoparticles under Visible Light Illumination, *Applied Catalysis B: Environmental*, **2006**, *64*, 312-317.
9. Yanwen Tian and Chengkun Xu, Selective leaching of cadmium in spent CdNi batteries. *Nonferrous Metal*, *52*(3), 70 (2000).
10. Chengkun Xu and Yuchun Zhai, Leaching kinetics of nickel and cobalt in spent CdNi batteries, *Engineering Chemistry & Metallurgy*, *20*(3), 295 (1999).
11. Chengkun Xu and Zhongdong Yang, Synthesis of nanocrystalline materials by electrodeposition. *Materials Review.*, *11*(4), 19 (1997).
12. Chengkun Xu and Zhongdong Yang, Composite plating techniques of functionally gradient materials. *J. Functional Materials.*, *27*(6), 490 (1996).
13. Zhongdong Yang and Chengkun Xu, Electroplating and Corrosion Resistance of Ni-W Amorphous Alloy. *J. Functional Materials.*, *27*(2), 179 (1996).