

# Curriculum Vitae

## ① Personal information

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Name: Kan Liu

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## ② Education

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09/2002—07/2007 Ph.D. in Condensed Matter Physics, Department of Physics, Wuhan University, P. R. China

09/1998—07/2002 B.S. in Applied Physics, Department of Physics, Wuhan University, P. R. China

## ③ Technical Experience

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- Expert in [Physics](#), [Chemistry](#), [Biotechnology](#) and [Material science](#);  
**Especially:** ● Lithography ● Soft-Lithography ● MEMS ● Microfluidic device  
● Polymer ● Surface Modify ● Cell Culture ● DNA and Protein Detection  
● Thin Film ● Chip Design ● Electrical Sensor ● Optical Sensor.
- Familiar with most characteristic methods: SPR, TEM, DSC, SEM, AFM, XRD, XPS, PL, Electrophoresis, ELISA etc.

## ④ Research Statement

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During my M.S and Ph.D. study, my work mainly focused on **Biology/Chemistry Microfluidic Chip Design and Fabrication**.

**Microfabrication, Surface Modify, Chemical synthesis and Bio-analysis.**

- Very skillful for [Microfabrication](#) including characterization
- Familiarity with preparation of [Thin Films](#) using Layer-by-layer assembly or Physics methods
- [Surface Modify/Antibody-antigen interaction](#) for protein detection
- [Cell Culture/Separation/Lysis/analysis](#)
- [Chemical Synthesis](#) technology
- [Biomedical equipment design and fabrication](#)
- [Sensor](#) design and fabrication

## ⑤ Computer / English Abilities

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- Be adept in a large amount of multimedia software, such as **Image Pro Plus, CorelDRAW, Illustration, L-Edit, Photoshop, AutoCAD** etc. Typical mathematic software such as

**Origin, Matlab, Analysis** etc. Highly skillful in operation systems, office software, and maintenance of hardware.

- **National Computer Rank: Grade 3A.** FORTRAN and C /C++ language
- **College English Test(CET):6** ;Have a good command of English, proficient in reading and writing and have no problem in communicating with others in English.

## ☺ Publications

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1. Shape-Controlled Production of Biodegradable Calcium Alginate Gel Microparticles Using a Novel Microfluidic Device  
**Kan Liu**, Hui-Jiang Ding, Jing Liu, Yong Chen, and Xing-Zhong Zhao  
Published in *Langmuir*, 22 (22), 9453 – 9457, 2006
2. Droplet-based synthetic method using microflow focusing and droplet fusion  
**Kan Liu**, Hui-Jiang Ding, Yong Chen, and Xing-Zhong Zhao  
Published in *Microfluidics and Nanofluidics*, 3, 239-243, 2007
3. Injection angle dependence in flow focusing based droplet formation  
**Kan Liu**, Li-Bo Zhao, Qian Zeng, Zhi-Xiao Guo, Yong Chen, and Xing-Zhong Zhao  
**Submitted.**
4. Encapsulation and culture of microbial cells in calcium alginate hydrogel beads on a chip  
**K. Liu**, Zhi-Xiao Guo, Hui-Jiang Ding, Cheng-Xiang Fang, Yong Chen and Xing-Zhong Zhao  
**Submitted.**
5. Manipulation of droplet in microfluidic device by novel electrodes  
**K. Liu**, Li-Bo Zhao, Qian Zeng, Hui-Jiang Ding, Yong Chen and Xing-Zhong Zhao  
**Prepared.**
6. Flow-focusing Generation of Monodisperse Water Droplets Enwrapped in Ionic Liquid on Microfluidic Chips: From Plug to Sphere  
Wei-Han Wang, Li Wang, Zhi-Ling Zhang, Song Yi, **Kan Liu**, Ya-Ni Xie, Jia Liu, Dai-Wen Pang, and Xing-Zhong Zhao  
**Submitted.**

## ☺ Patents

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1. A method of low cost and simple to prepare a lithography mask “一种低成本简易制作光刻掩膜的方法”  
Patent Number(China): CN200510019949.7; Open Number(China): CN1776523  
Xing-Zhong Zhao, **Kan Liu**, Wei Liu, and Hong-Wei Han
2. A method of preparing polymer microsphere using a microfluidic chip “一种微流芯片及利用微流芯片制备聚合物微球的方法”  
Patent Number(China): CN200610019354.6; Open Number(China): CN1884514  
Xing-Zhong Zhao, **Kan Liu**
3. Electrodes prepared in microfluidic chip “微沟道电极及其微流控分析芯片”  
Patent Number(China): CN200610125095.5 Xing-Zhong Zhao, **Kan Liu**, Hui-Jiang Ding.