

## Curriculum Vitae

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### Prof. Dr. Tao Feng

**Current Position: Visiting Scientist**

Institute of Nanotechnology  
Karlsruhe Institute of Technology (KIT)  
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**Formal Position: Associate Professor**

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## Education and Degrees Received

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**Ph. D.** in microelectronics and solid-state electronics received in 2006 from **Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences**, Shanghai.

<b>Duration</b>	January 2003 - January 2006
<b>Research field</b>	Carbon-based nanomaterials and field emission displays
<b>Ph. D. thesis</b>	The key technology of preparing carbon nanotube field emission displays
<b>Advisor</b>	Prof. Shichang Zou (Member of CAS) Prof. Xi Wang (Member of CAS)

**M. Sc.** in microelectronics and solid-state electronics received in 2002 from **Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences**, Shanghai.

<b>Duration</b>	September 1999 - January 2002
<b>Research field</b>	Field emission materials and device
<b>M. Sc. thesis</b>	The basic reaserch of field emission display
<b>Advisor</b>	Prof. Shichang Zou (Member of CAS) Prof. Xi Wang (Member of CAS)

**B. Sc.** in microelectronics received in 1999 from Department of Information Technology and Microeletronics, **Zhejiang University**, Hangzhou.

<b>Duration</b>	January 2003 - January 2006
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## Research Experience

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### May 2012 – now

**Visiting Scientist**, Institute of Nanotechnology (INT), **Institute of Karlsruhe (KIT)**, Karlsruhe, Germany, working in the field of nanoglasses.

### September 2010 – April 2012

**Alexander von Humboldt fellow**, Institute of Nanotechnology (INT), **Institute of Karlsruhe (KIT)**, Karlsruhe, Germany, working in the field of nanoglasses.

### July 2006 – August 2010

**Associate Professor**, Engineering Research Center for Nanophotonics & Advanced Instrument, Ministry of Education, **East China Normal University**, Shanghai, China, working in the field of carbon-based nanomaterials and its applications.

### October 2005 – December 2005

**Visiting Scholar**, Department of Information Display, **Kyung Hee University**, Seoul, **Korea**, worked in the fields of field emission displays packing technology.

### January 2002 – July 2006

**Assistant Professor**, State Key Laboratory of Functional Materials for Informatics, **Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences**, Shanghai, China, worked in the fields of nanomaterials and field emission displays.

## Research Interests

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### **Nanomaterials Preparation and Application**

**Flat panel displays** (FED, LCD, OLED, PLED, LED, PDP, etc.)

**Thin-film Solar Cell**

## Grants and Rewards

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| <b>2008-2010</b> | The Research of low-cost CIGS thin film solar cells<br><b>Sub-project Director</b> , Supported by the Science and Technology Committee of Shanghai (0852nm06100)                          |
| <b>2007-2009</b> | The CNT-FED module for large-size displays<br><b>Director</b> , Supported by the Rising Star Program of Shanghai (07QA14019)  |
| <b>2006-2008</b> | Pt/C mixed films prepared by IBAD and its application in suppression grid electron emission<br><b>Director</b> , Supported by the National Natural Science Foundation of China (59972039) |
| <b>2006-2008</b> | The industrialization of energy efficient LED and its module for large-size screen<br><b>Director</b> , Supported by the Science and Technology Committee of Shanghai (0652nm033)         |
| <b>2004-2006</b> | The development of the driving field emission displays<br><b>Director</b> , Supported by the Science and Technology Committee of Shanghai (0452nm048)                                     |
| <b>2002-2004</b> | Field emission displays based on carbon nanotube<br><b>Director</b> , Supported by the Science and Technology Committee of Shanghai (0214nm085)   |

## Awards and Honours

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- 2010** Alexander von Humboldt fellowship  
**2009** Shanghai Developing Talent award of 2009 from Shanghai Municipal Human Resources and Society Security Bureau  
**2007** One Sci-Tech Rising Star of Shanghai award of 2007 from the Science and Technology Committee of Shanghai  
**2002** The best paper award of 2002 from Chinese Institute of Electronics  
**2001** Excellent Academic Scholarship from Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences

## Publications (Over 50, Selected list)

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1. Field emission properties of carbon nanotubes in a stretchable polydimethylsiloxane matrix  
Hui Ding, **Tao Feng\***, Yiwei Chen, Zhuo Sun  
**Applied Surface Science**, 2012, doi:10.1016/j.apsusc.2012.01.045
2. The mechanism of Pt films to suppress the electron emission of grid in TWTs  
Tianjun Li, **Tao Feng\***, Bingyao Jiang, Xianghuai Liu, Yiwei Chen, Zhuo Sun  
**Phys. Status Solidi C**, 2012(9), 32-35
3. Structural investigations of interfaces in Fe<sub>90</sub>Sc<sub>10</sub> nanoglasses using high-energy X-ray diffraction  
M. Ghafari, S. Kohara, H. Hahn, H. Gleiter, **T. Feng**, R. Witte, and S. Kamali,  
**Applied Physics Letters**. 2012(100), 133111
4. A facile method for preparing transparent, conductive, and paper-like silver nanowire films  
Yajie Wang, **Tao Feng\***, Kai Wang, Min Qian, Yiwei Chen, Zhuo Sun  
**Journal of Nanomaterials**, 2011, doi:10.1155/2011/935218
5. Structural, optical and electrical properties of amorphous silicon thin films prepared by sputtering with different targets  
Yi Qin, **Tao Feng\***, Zhiqiang Li, Zhuo Sun  
**Applied Surface Science**, 2011 (257), 7993-7996
6. Formation of freestanding two-dimensional carbon nanosheets from poly(phenylacetylene) through pulsed laser ablation  
Min Qian, Yun Shen Zhou, Yang Gao, Jong Bok Park, **Tao Feng**, Su Mei Huang, Zhuo Sun, Lan Jiang, Yong Feng Lu  
**Carbon**, 2011(49), 5117-5123
7. Formation of graphene sheets through laser exfoliation of highly ordered pyrolytic graphite  
Min Qian, Yun Shen Zhou, Yang Gao, Jong Bok Park, **Tao Feng**, Su Mei Huang, Zhuo Sun, Lan Jiang, Yong Feng Lu  
**Applied Physics Letters**, 2011(98) 173108-173110.
8. The field emission of vacuum filtered graphene films reduced by microwave  
Kai Wang, **Tao Feng\***, Min Qian, Hui Ding, Yiwei Chen, Zhuo Sun  
**Applied Surface Science**, 2011 (257), 5808-5812

9. The patterned electron field emission of printed carbon nanotube films by image transfer technology  
**Tao Feng\***, Yiwei Chen, Ding Hui, Zhuo Sun  
**Vacuum**, 2010(85), 527-530
10. Field emission of carbon nanotube films fabricated by vacuum filtration  
Min Qian, **Tao Feng\***, Kai Wang, Hui Ding, Yiwei Chen, Qiong Li, Zhuo Sun  
**Physica E**, 2010(43), 462-465
11. Enhanced field emission properties of screen-printed doubled-walled carbon nanotubes by polydimethylsiloxane elastomer  
Hui Ding, **Tao Feng\***, Zhejuan Zhang, Kai Wang, Min Qian, Yiwei Chen, Zhuo Sun  
**Applied Surface Science**, 2010 (256), 6596-6600
12. A comparative study of field emission properties of carbon nanotube films prepared by vacuum filtration and screen-printing  
Min Qian, **Tao Feng\***, Kai Wang, Hui Ding, Yiwei Chen, Zhuo Sun  
**Applied Surface Science**, 2010 (256) , 4642-4646
13. Electron field emission from screen-printed graphene films  
Min Qian, **Tao Feng\***, Hui Ding, Lifeng Lin, Haibo Li, Yiwei Chen, Zhuo Sun  
**Nanotechnology**, 2009 (20) 425702-08
14. Formation of Pt-C films by ion beam assisted deposition for the application of suppression thermo-electron emission  
**Tao Feng\***, Bingyao Jiang, Xi Wang, Xianghuai Liu, Sun Zhuo  
**Applied Surface Science**, 2009(255), 4145-4148
15. Study on the orientation of silver films by ion-beam assisted deposition  
**Tao Feng\***, Bingyao Jiang, Sun Zhuo, Xi Wang, Xianghuai Liu  
**Applied Surface Science**, 2008(254), 1565-1568
16. Effects of plasma treatment on microstructure and electron field emission properties of screen-printed carbon nanotube films  
**Tao Feng**, Jihua Zhang, Qiong Li, Xi Wang, Ke Yu, Shichang Zou  
**Physics E: LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES**. 2007(36), 28-33
17. Effect of sputtered Cu films diffusion barrier on the growth and field emission properties of carbon nanotubes by chemical vapor deposition  
L L Wang, T Chen, **T Feng**, Y W Chen, W X Que, L F Lin, Z Sun  
**Applied Physics A**, 2007(90), 701-704
18. Memory emission of printed carbon nanotube cathodes  
**Tao Feng**, Lijuan Dai, Jun Jiang, Xi Wang, Xianghuai Liu, Shichang Zou, Qiong Li, Jingfang Xu  
**Applied Physics Letters**. 2006(88), 203108-203110
19. Field emission properties and synthesis of carbon nanotubes grown by rf plasma-enhanced chemical vapor deposition  
J. Jiang, **T. Feng**, J. H. Zhang, X. H. Cheng, G. B. Chao, B. Y. Jiang, Y. J. Wang, X. Wang, X. H. Liu, S. C. Zou  
**Applied Surface Science**, 2006(252), 2938-2943

20. Synthesis and growth mechanism of Fe-catalyzed carbon nanotubes by plasma-enhanced chemical vapor deposition  
Jun Jiang, **Tao Feng**, Xinhong Cheng, Jihua Zhang, Gongbai Chao, Bingyao Jiang, Xi Wang, Xianghuai Liu, Shichang Zou  
**Nuclear Instrument and Methods in Physics Research B**, 2006(244), 327-332
21. Interaction between carbon nanotubes and substrate and its implication on field emission mechanism  
Jihua Zhang, Xi Wang, Wenwei Yang, Weidong Yu, **Tao Feng**, Qiong Li, Xianghuai Liu, Chuanren Yang  
**Carbon**, 2006(44), 418-422
22. Growth and field emission of coiled carbon nanotubes by plasma enhanced chemical vapor deposition  
J. Jiang, **T. Feng**, X.H. Cheng, L.J. Dai, G.B. Cao, J.H. Zhang, B.Y. Jiang, X. Wang, X.H. Liu and S.C. Zou  
**Materials Letters**, 2006(60), 1085-1088
23. Surface modification of printed carbon nanotubes and its application of field emission  
**Tao Feng**, Jihua Zhang, Xi Wang, Xianghuai Liu, Shichang Zou, Qiong Li, Jingfang Xu  
**Surface Review and Letters**, 2005(12), 1-7
24. Improved emission stability of HfC-coated carbon nanotubes field emitters  
Jun Jiang, Jihua Zhang, **Tao Feng**, Bingyao Jiang, Yongjin Wang, Fumin Zhang, Xi Wang, Xianghuai Liu, Shichang Zou  
**Solid State Communications**, 2005(135), 390-393
25. Enhancement of field emission from hydrogen plasma processed carbon nanotubes  
Jihua Zhang, **Tao Feng**, Weidong Yu, Xiaoguai Liu, Xi Wang, Li Qiong  
**Diamond and Related Materials**, 2004(13), 54-57
26. Nodose Carbon Nanotubes and Its Field Emission Characteristics  
**Tao Feng**, Qiong Li, Jingfang Xu, Xi Wang, Xianghuai Liu, Shichang Zou  
**Nuclear Instruments and Methods B**. 2003(206), 198-201
27. Silicon nitride thin films packaging for flexible organic emitting light devices  
**T.Feng**, X.Wang, F.M.Zhang, S.C.Zou, W.D Huang, X.H.Wang, L.Luo, L.Q.Xu, F.Stubhan, S.T.Lee  
**Modern Physics B**, 2002(16), 1052-1056
28. Nodular Carbon Nanotubes and Their Field Emission Characteristics  
Li Qiong, Xu Jing-Fang, **Feng Tao**, Wang Xi, Liu Xiang-Huai  
**Chinese Physics Letters**, 2002(19), 1021-1023
29. Synthesis of large-area germanium cone-arrays for application in electron field emission  
Q.Wan, T.H.Wang, **T.Feng**, X.H.Liu, C.L.Lin  
**Applied Physics Letter**, 2002(81), 3281-3283

## Invited Lectures

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1. Application of Carbon Nanotubes in Displays  
**T.Feng**, Z.Sun, Z.J.Zhang, L.F.Lin, H.Ding, Y.W.Chen, L.K.Pan  
**Invited speaker** on the 2008 International Meeting on Information Display/International Display Manufacturing Conference/ASIA DISPLAY (IMID/IDMC/AD 2008), Oct. 13-17, 2008, Ilsan, Korea
2. Development of carbon nanotube light array for large-size display  
**T.Feng**, Z.Sun, L.L.Wang, T.Chen, Z.J.Zhang, L.F.Lin, Y.W.Chen, P.S.Guo, X.Wang  
**Invited speaker** on the 2<sup>nd</sup> International Conference on Information Display +2  
March 12-16, 2007, Shanghai, China
3. The enhancement of the carbon nanotubes field emission properties by inducing defects  
**T.Feng**, J.H.Zhang, Q.Li, J.F.Xu, X.H.Liu, X.Wang  
**Invited speaker** on the 14<sup>th</sup> National Conference of Semiconductor Physics, December 8-10, 2003, Hongkong, China

## Authorized Patents (Chinese)

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1. ZL 01 1 32287.X A method for the improvement of CNT field emission performance  
**Feng Tao**, Wang Xi, Liu Xianghuai, Li Qiong.
2. ZL 01 1 21100.8 A method for OLED packing  
Wang Xi, **Feng Tao**, Zhang Fumin, Zou Shichang, Luo Le, Wang Xuhong, Huang Weidong, Li Shutang:

## Patent Applications (Chinese)

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1. 20031012288.6 Vacuum packing technology for CNT-FED  
**Feng Tao**, Zhang Jihua, Li Qiong, Wang Xi
2. 200510111620.3 A method for the improvement of screen-printed CNT film field emission properties  
**Feng Tao**, Dai Lijuan, Jiang Jun, Wang Xi, Zhang Zhenxuan
3. 200510111624.1 A method for CNT patterned display  
**Feng Tao**, Dai Lijuan, Jiang Jun, Wang Xi, Zhang Zhenxuan
4. 200510001343.0. The preparation of Pt-C films on the grid of TWTs  
Jiang Binyao, Jiang Jun, **Feng Tao**, Wang Xi, Liu Xianghuai
5. 200510001342.6 The preparation of Hf film based on IBAD  
Jiang Binyao, Jiang Jun, **Feng Tao**, Wang Xi, Liu Xianghuai

6. 200510117982.3. The preparation of ZnO/Al films on the grid of TWTs  
Jiang Jun, Jiang Binyao, Ren Chongxin, Zhang Fumin,  
**Feng Tao**, Wang Xi, Liu Xianghuai, Zou Shichang
7. 200310109479.4 CNT-FED array controlled by transistors  
Zhang Jihua, Yang Wenwei, Dong Yemin, Wang Xi,  
YuWeidong, **Feng Tao**