Yinhe Zhang

Target: Mechanical/Electromechanical R&D Engineer

"Exact but Flexible, Quick Learner and Good Teamworker."

Research and Professional Experiences

7 research papers published and 2 patents authorized. (see the appendix)

2009.07 — 2013.11 **Research Associate**, *Department of Space Optics, Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), China Academy of Sciences (CAS).*

I was engaged in R&D for key technologies in space optics and instruments. I was mainly in charge of design and optimization of frame structures and lens, computer-aided alignment and assembly. I am familiar with structural analysis and testing. In the meantime, I designed some nonstandard fixtures.

During the time, I have participated in R&D of four aerospace instruments projects.

* Participated in the fabrication, assembly and verifying testings of one advanced research project of optical instrument for CAS.
* Participated in R&D of a optical imaging instrument for State High-Tech Development Plan (863 Program), mainly in design and optimization of mainframe structure and lens supports, and in charge of assembly, alignment and testing of the instrument.
* Participated in R&D of a optical instrument, mainly for assembly and alignmeng and related testings.
* Participated in the structural design, assembly and alignment, and testings of one advanced research project of optical instrument for CAS.
* Working Skills:
  – Design and optimizing of structures, mechanisms and optical elements, using CAD/CAE tools such as UGS NX、SolidWorks、AutoCAD、Patran/Nastran, etc.
  – Postprocessing and optimizing of data from assembly, alignment and tests of products with Matlab/Python.

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– Familiar with whole processes of optical instrument manufacturing, from concepts of design, detailed design to verification with CAE tools and tests, and from fabrication to mounting and alignment.

2007.07 — 2009.06 **Research on micro-/nano- fluid in Micro-/Nano- Electro-Mechanical Systems**, *(during postgraduate)*.

Using Molecular Dynamics (MD) and multiscale computing methods to simulate micro-/nano-fluid phenomena and electroosmotic fluid. Basing on their microscopic mechanism, we explored their application in micro-/nano-fludic chips. *This work was supported by the State High-Tech Development Plan (863 Program) project "Development of Modeling Software for Biological Micro-/Nano-Fluidics." (Grant NO. 2006AA04Z305).*

* MD simulation software was developed using C/Python, and auxiliary pre-/post-processing codes were also developed using Python/Bash.

Education

2007.09 — 2009.06 **Master of Engineering (Recommended for admission)**, *Design and Theory of Mechanics*, Jilin University, China.

2003.09 — 2007.06 **Bachelor of Engineering (summa cum laude)**, *in Mechanical Engineering and Automation*, Jilin University, China, (3 times of First-Class Scholarship and Unversity Outstanding Student, one time of Second-Class National Scholarship.).

Various Skills

Foreign Language: English: Fluent in reading, writing and fair in speaking. Can do translation work both ways. Scored 92 on CET-4 in 2004 and 490 on CET-6 in 2005 respectively.

Modeling: Master of AutoCAD、CATIA、SolidWorks、UGS NX、Patran/Nastran、ADAMS

Computer: C/C++、Python、Fortran、Matlab、Bash、Git & SVN

Familiar with Linux and scientific computing

Miscellaneous: TEX/LATEX、Openoffice.org Office Suite、Emacs/Vim, etc.

Others

In spare time, I like reading, swimming and singing.

References

Available upon request.

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Appendix: Published Patents and Papers

Patents in China

[1] 张银鹤，李志来，徐宏，董得义，杨会生. 空间相机蒙皮阻尼辅助支撑结构. 发明专利，专利号：ZL 2010 1 0596792.5，证书号：第 908191 号。

[2] 宋涛，张银鹤，李志来，徐宏，胡海飞. 一种偏心轴焦面调焦机构. 发明专利，专利号：ZL 2010 1 0585900.9，证书号：第 1010499 号。

Research Papers

[1] Yang, Huisheng and **Zhang, Yinhe** and Chai, Fangmao and Xu, Hong and Li, Zhilai and Guan, Yingjun. *Design of focusing mechanism for off-axis TMA space camera*.Optics and Precision Engineering, 2012, 21(4): 948–954. (In Chinese, http://dx.doi.org/10.3788/OPE.20132104.0948)

[2] Cao, Qianqian and Zuo, Chuncheng and Li, Lujuan and **Zhang, Yinhe** and Yan, Guang. *Electro-osmotic flow in nanochannels with voltage-controlled polyelectrolyte brushes: dependence on grafting density and normal electric field*. Journal of Polymer Science Part B: Polymer Physics, 2012, 50(11): 805–811. (http://dx.doi.org/10.1002/polb.23069)

[3] Cao, Qianqian and Zuo, Chuncheng and Li, Lujuan and **Zhang, Yinhe**. *Electrophoresis of bottle-brush polyelectrolytes in an attractive nanochannel*. Macromolecular Theory and Simulations, 2012, 21(7): 492–499. (http://dx.doi.org/10.1002/mats.201100121)

[4] Bao, He and Yang, Liwei and Jiang, Xiaonan and Dong, Deyi and **Zhang, Yinhe** and Li, Zhilai. *Design of draft adjusting mechanism for space optical camera*. Opto-Electronic Engineering, 2012, 39(6): 22–28. (In Chinese, http://dx.doi.org/10.3969/j.issn.1003-501X.2012.06.004)

[5] Cao, Qianqian and Zuo, Chuncheng and Li, Lujuan and **Zhang, Yinhe**. *Modulation of electroosmotic flow by electric field-responsive polyelectrolyte brushes: a molecular dynamics study*. Microfluidics and Nanofluidics, 2012, 12(1). (http://dx.doi.org/10.1007/s10404-011-0865-7)

[6] Yang, Huisheng and Dong, Deyi and **Zhang, Yinhe** and Bao, He and Li, Zhilai. *Space adaptability analysis and experiment of focusing mechanism in space camera*. In Proceedings of International Conference on Micro/Nano Optical Engineering, 2011.

[7] Miao, Fei and Zuo, Chuncheng and Li, Jing and **Zhang, Yinhe**. *Study on Bionic Algorithm Used for the Interval Optimization*. Journal of Changchun University of Science and Technology (Natural Science Edition), 2008, 31(3): 147–148. (in Chinese)