

Biography

01/2013-present, Phd	Biomedical Engineering Department of University of California-Davis
01/2013-06/2013	Research assistant at George Washington University
07/2012-12/2012	Research assistant at State Key Laboratory of Tribology
09/2009-07/2012, MS	Dept. of Precision Instruments and Mechanology, Tsinghua University
07/2008-09/2009	Preparing for Graduate Entrance Examination and working as a private teacher
09/2004-07/2008, BS	Dept. of Mechanical Engineering, Zhengzhou University

Research Experience

- **09/2014-present Predicting the activity of protein via machine learning**

The activity of a query protein is predicted based on ANN, SVM, NB, RF model by training the model with data about protein with known sequence, 3D structure and activity.

- **09/2013-03/2014 Reversible bonding under water via hydrophobic interaction**

Gold surfaces assembled with carbon thiol molecules are bonded together reversible under water with a maximum bonding strength being 520KPa(± 88 KPa)

- **02/2012-05/2013 Self-repairing lubricant**

Under the condition of friction, magnesium silicate hydroxide nanoparticle is able to repair worn metal surface by inducing the formation of a diamond carbon like layer, which demonstrate low friction and higher wear resistance.

- **07/2011-02/2012 The lubricity of Si₃N₄ nanoparticle suspension**

Si₃N₄ ceramic is able to attain superlubrication when sliding in water after a long running-in period. Si₃N₄ nanoparticle is dispersed in water to enhance Si₃N₄ factor during the chemical reaction. The suspension of Si₃N₄ nanoparticle in acid solution demonstrates lubricity for other ceramic such as alumina and zirconia.

- **03/2011-07/2011 Synthesis of nano-graphite oxide**

Due to its lamellar structure, the lubricity of graphite oxide is studied as a water-based lubricant additive.

- **10/2010-05/2011 Chemical Modification of fullerene**

The nanoparticle fullerene is water soluble after chemical modification using hydrogen peroxide and ammonia water and then used to enhance the load-bearing ability of water-based lubricants.

- **03/2008-06/2008 Design of a abrasion peeling machine**

A kind of root tuber is difficult to be held due to its irregular geometry during the peeling process. Friction peeling mechanism was chosen to implement the function. Structural design

was conducted on Solidworks.

Publications

[1].Yuhong Liu, Xiaokang Wang, et al. Modification on the tribological properties of ceramics in fullerenol aqueous solution. [J] Sci China Tech Sci, 2012, 55: 2656-2661

[2].Yuhong Liu, Xiaokang Wang, et al. A comparative study between graphene oxide and diamond nanoparticles as water-based lubricating additives. [J]. Sci China Tech Sci, 2012

English Tests

GRE: 610(>88% verbal)+800(>94% mathematics)+3.5(writing)

TOELF (ibt): 101(total)=30(reading)+25(listening)+22(speaking)+24(writing)

Computer Skills

Machine learning by Matlab and R, Cartography by CAD and Solid works, Programming by C and C++

Honors and Prizes

2006 Contemporary Undergraduate Mathematical Contest in Modeling (grade 3)

2006 scholarship of ZHENGZHOU University (grade 2)

2005 scholarship of ZHENGZHOU University (grade 2)

Extra-curricular Activities

08/2010 a volunteer on the 18th International Vacuum Congress

10/2009 a volunteer on the Ninth National Congress of Tribology