东北大学 冶金学院
Northeastern University School of Metallurgy

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更新时间: 2019-01-19 10:41:50 阅读次数: 120 次 作者:

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出生年月	1984.01	政治面貌	九三学社
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学习工作经历:

2015年于加泰罗尼亚理工大学(Barcelona-Tech)获工学博士学位;

2017年06月至今为东北大学-冶金学院-钢铁冶金系副教授、硕士生导师。

主要研究方向:

研究生培养

培养过程管理

招生信息

培养方案

专业介绍

导师介绍

硕士生导师介绍

博士生导师介绍

硕士、博士导师简况表

制度文件

研究生精品课

材料与冶金学报

诚聘英才

下载专区

招收以下方向的硕士和博士研究生：

1. 过程冶金数值模拟：

   CFD-DEM数值模拟

   LBM-DEM耦合模型

   非球形颗粒计算方法

2. 大气污染控制：

   CFD-DEM数值模拟

   污染机理及设备、工艺优化

3. 可再生能源高校优质转化：

   煤炭/生物质超临界水气化制氢反应颗粒尺度数理模型与仿真

近年讲授课程：

Powder Technology in Iron and Steel Making（全英文）

所在团队情况：

安希忠教授团队（过程冶金及粉体工程研究中心）

人才培养情况：

本人目前指导硕士研究生3人，协助指导博生研究生1人。本人所在团队（SIMPAS@NEU）的研究生人均发表论文数较高，与国外知名大学建立长期稳固的合作关系，每年均推荐优秀研究生到国外知名大学（如澳洲蒙纳士大学Aibing Yu教授领导的SIMPAS，新南威尔士大学沈岩松博士领导的ProMO等对颗粒研究有较深造诣的团队）深造。欢迎对本人和SIMPAS@NEU团队研究方向感兴趣的同学加入我们。

协助指导1名博士毕业生获得“国家奖学金”；

协助指导1名博士毕业生获得“研究生校长奖优秀奖”；

协助指导1名硕士毕业生获得“2017年湖南省优秀硕士学位论文奖”；

协助指导1名硕士毕业生获得“研究生校长奖优秀奖”；

指导研究生：

1. 韦光超，《高炉风口回旋区异形颗粒运动及传热机制的试验和CFD-DEM耦合模拟研究》，博士研究生（协助指导），2017.09—至今；
2. 柯春海，《基于IB-LBM的颗粒系统在多物理场中的多相传热和运动特性的数值模拟研究》，博士研究生（协助指导），2015.09—2018.07；
3. 李巩，《待定》，硕士研究生，2018.09—至今；
4. 张利兴，《待定》，硕士研究生，2018.09—至今；
5. 熊勃，《超临界水中非球形煤炭颗粒受力与传热特性的多尺度建模研究》，硕士研究生，2017.09—至今；
6. 柯春海，《CPU-GPU异构体系下基于离散元法的散体物料运输问题的数值模拟》，硕士研究生（协助指导），2012.09—2015.07；

7. 李浩，《基于LBM-IBM-DEM的圆形颗粒在粘性流体中沉降的耦合模型及数值模拟》，硕士研究生（协助指导），2010.09—2013.07；

8. 赵伟，《基于CFD-DEM高炉风口回旋区形状和传热特性数值模拟研究》，本科生，2018.03—2018.07；

科研项目情况：

主持：

1. 2017-2019, 3-年. 国家自然科学基金青年基金项目(51606040).资助金额: 20.0 万元. 在研.

2. 2016-2018, 3-年. 江苏省自然科学基金青年基金项目(BK20160677). 资助金额: 20.0 万元. 在研.

3. 2016-2017, 2-年. 中国博士后科学基金面上项目一等资助(2016M590397). 资助金额: 8.0 万元. 结题.

4. 2016-2017, 2-年. 江苏省博士后科研资助**A**类资助(1501001A). 资助金额: 9.0 万元. 结题.

参与：

1. 2017-2020, 4-年. 国家自然科学基金面上项目(51676043). 资助金额: 60.0万元. 在研.

2. 2016-2019, 4-年. **NSFC-**山西煤基低碳联合基金重点项目(U1510204). 资助金额: 267.0万元. 结题.

3. 2013-2015, 3-年. 国家自然科学基金面上项目(11171281). 资助金额: 50.0万元. 结题.

4. 2013-2014, 2-年. 中联重科股份有限公司合作项目. 资助金额: 200.0万元. 结题.

5. 2009-2011, 3-年. 国家自然科学基金面上项目(50875224). 资助金额: 40.0万元. 结题.

论文著作：

目前参编学术著作一部，发表各类论文70余篇，其中SCI收录30篇，近年年均发表SCI论文7篇左右。截止到2018年9月，引用464次（Google Scholar based），h因子为11（Google Scholar based），i10因子为13（Google Scholar based），RG Score为25.75（Research Gate）。

期刊论文（*为通讯作者）：

2018

1. **H. Zhang***, B. Xiong, X. An*, C. Ke, G. Wei. Prediction on drag force and heat transfer of spheroids in supercritical water: a PR-DNS study. **Powder Technology**, n(2018), x-y. (SCI收录号：) (Accepted)

2. C. Ke, S. Shu, **H. Zhang***, H. Yuan. Drag coefficient and averaged Nusselt number of a scalene prolate spheroid. **Appied Mathematical modelling**, 64(2018), 556-571. (SCI收录号：)

3. C. Ke, S. Shu, **H. Zhang***, H. Yuan. Particle-scale numerical simulation on momentum and heat transfer of tandem spheroids: An IB-LBM study. **Advances in Applied Mathematics and Mechanics**, n(2018), x-y. (SCI收录号：) (Accepted)

4. C. Ke, S. Shu, **H. Zhang***, H. Yuan. On the drag coefficient and average Nusselt number for an ellipsoidal particle in a fluid. **Powder Technology**, 325(2018), 134-144. (SCI收录号：FW7CL)

5. R. Deng, Y. Tan*, **H. Zhang**, S. Jiang, X. Xiao, J. Wang. Numerical study on the discharging homogeneity of fresh concrete in truck mixer: Effect of motion parameters. **Particulate Science and Technology**, 36(2018), 146-153. (SCI收录号：GA8LZ)

6. K. Wu, L. Wan, **H. Zhang**, D. Yang*. Numerical simulation of the injection moulding process of short fibre composites by an integrated particle approach. **The International Journal of Advanced Manufacturing Technology**, (2018), 1-13. (SCI收录号：GN5VW)

7. D. Gou, X. An*, H. Zhao, **H. Zhang**, R. Yang. Dynamic characteristics of binary sphere mixtures under air impact. **Powder Technology**, 332(2018), 224-233. (SCI收录号：GG4CN)

8. Q. Jia, X. An*, H. Zhao, H. Fu, **H. Zhang**, X. Yang. Compaction and Solid-State Sintering of Tungsten Powders: MPFEM Simulation and Experimental Verification. **Journal of Alloys and Compounds**, 750(2018), 341-349. (SCI收录号：GG4LP)

9. P. Han, X. An*, D. Wang, H. Fu, X. Yang, **H. Zhang**, Z. Zou. MPFEM simulation of compaction densification behavior of Fe-Al composite powders with different size ratios. **Journal of Alloys and Compounds**, 741(2018), 473-481. (SCI收录号：FW7UK)

10. H. Fu, S. Sun, X. Yang*, W. Li, X. An, **H. Zhang**, Y. Dong, X. Jiang, A. Yu. A Facile coating method to construct uniform porous <alpha>-Fe2O3@TiO2 Core-shell nanostructures with enhanced solar light photocatalytic activity. **Powder Technology**, 328(2018), 389-396. (SCI收录号：GB1TR)

11. S. Jiang*, Y. Ye, Y. Tan, S. Liu, J. Liu, **H. Zhang**, D. Yang. Discrete element simulation of particle motion in rotating drums based on similarity. **Powder Technology**, 335(2018), 91-102. (SCI收录号：GM3KB)

2017

12. **H. Zhang***, Y. Shao, K. Li, Y. Hu. On the thermal boundary conditions of particulate-fluid modelling. **Powder Technology**, 314(2017), 315-327. (SCI收录号：EV6LK)

13. R. Deng, Y. Tan*, **H. Zhang**, X. Xiao, S. Jiang. Experimental and DEM studies on the segregation mechanisms in the truck mixer. **Powder Technology**, 314(2017), 148-163. (SCI收录号：EV6LK)

14. X. Xiao, Y. Tan*, **H. Zhang**, R. Deng, S. Jiang, C. Hu. Experimental and DEM Studies on the Particle Mixing Performance in Rotating Drums: Effect of Area Ratio. **Powder Technology**, 314(2017), 182-194. (SCI收录号：EV6LK)

15. C. Ke, S. Shu, **H. Zhang**, H. Yuan*. LBM-IBM-DEM modelling of magnetic particles in a fluid. **Powder Technology**, 314(2017), 264-280. (SCI收录号：EV6LK)

16. J. Wang, W. Zhong*, **H. Zhang**. Characterization of flow structures in fluidized beds by information entropy analysis of pressure fluctuations. **The Canadian Journal of Chemical Engineering**, 95(2017), 578-588. (SCI收录号：)

17. D. Gou, X. An*, X. Yang, H. Fu, **H. Zhang**. CFD-DEM modeling on air impact densification of equal spheres: structure evolution, dynamics, and mechanism. **Powder Technology**, 322(2017), 177-184. (SCI收录号：FL0CY)

2016

18. **H. Zhang***, H. Yuan, F.X. Trias, A. Yu, Y. Tan, A. Oliva. Particulate immersed boundary method for complex fluid-particle interaction problems with heat transfer. **Computers & Mathematics with Applications**, 71(2016), 391-407. (SCI收录号：DC8FJ)

19. L. Xie, W. Zhong*, **H. Zhang**, Aibing Yu, Yujun Qian, Yougong Situ. Wear process during granular flow transportation in conveyor transfer. **Powder Technology**, 288(2016), 65-75. (SCI收录号：DA5RW)

20. W. Zhong*, A. Yu, X. Liu, Z. Tong, **H. Zhang**. DEM/CFD-DEM modelling of non-spherical particulate systems: Theoretical developments and applications. **Powder Technology**, 302(2016), 108-152. (SCI收录号：EA2KF)

21. W. Zhong*, A. Yu, G. Zhou, J. Xie, **H. Zhang**. CFD simulation of dense particulate reaction system: Approaches, recent advances and applications. **Chemical Engineering Science**, 140(2016), 16-43. (SCI收录号：CZ5BN)

2015

22. **H. Zhang***, A. Yu, W. Zhong, Y. Tan. A combined TLBM-IBM-DEM scheme for simulating isothermal particulate flow in fluid. **International Journal of Heat and Mass Transfer**, 91(2015), 178-189. (SCI收录号：CS5PQ)

23. **H. Zhang**, F.X. Trias, A. Gorobets, Y. Tan, A. Oliva*. Direct numerical simulation of a fully developed turbulent flow in a square duct up to Reτ=1200. **International Journal of Heat and Fluid Flow**, 54(2015), 258-267. (SCI收录号：CO0CM)

24. **H. Zhang**, F.X. Trias, A. Oliva*, D. Yang*, Y. Tan, Y. Sheng. PIBM: Particulate immersed boundary method for fluid-particle interaction problems. **Powder Technology**. 272(2015), 1-13. (SCI收录号：CB4BP)

25. **H. Zhang**, F.X. Trias, A. Gorobets, A. Oliva*, D. Yang*, Y. Tan, Y. Sheng. Effect of collisions on the particle behavior in a turbulent square duct flow. **Powder Technology**. 269(2015), 320-336. (SCI收录号：AY3UF)

26. X. Yue, **H. Zhang**, C. Ke, C. Luo, S. Shu*, Y. Tan, C. Feng. A GPU-based DEM code and its application in die filling. **Computers & Fluids**. 110(2015), 235-244. (SCI收录号：868PB)

27. Y. Tan*, R. Deng, Y. Feng, **H. Zhang**, S. Jiang. Numerical study of concrete mixing transport process and mixing mechanism of truck mixer. **Engineering Computations**, 32.4(2015), 1041-1065. (SCI收录号：CL9CO)

28. C. Ke, **H. Zhang**, X. Yue, S. Shu*, Y. Tan, C. Feng. Numerical simulation of the emergency brake process in granular material transportation. **Chinese Journal of Applied Mechanics**, 5(2015), 775-782. (CSCD)

29. Y. Tan*, J. Zheng, **H. Zhang**, W. Gao, S. Jiang, X. Xiao. Numerical simulation of cone-in-cone in silo via discrete element method and parametric analysis. **The Chinese Journal of Process Engineering**, 15(2015), 916-922. (CSCD)

2014

30. **H. Zhang**, Y. Tan*, S. Shu, X. Niu, F.X. Trias, D. Yang, H. Li, Y. Sheng. Numerical investigation on the role of discrete element method in combined LBM-IBM-DEM modeling. **Computers & Fluids**, 94(2014), 37-48. (SCI收录号：AG5VU)

31. Y. Tan*, J. Song, **H. Zhang**, J. Wang, R. Deng, D. Yang. Numerical investigation of wear process on the pipe wall using discrete element method. **China Mechanical Engineering**, 25(2014), 2091-2097. (CSCD)

2012

32. **H. Zhang**, Y. Tan*, D. Yang, F.X. Trias, S. Jiang, Y. Sheng. Numerical investigation of the location of maximum erosive wear damage in elbow: effect of slurry velocity, bend orientation and angle of elbow. **Powder Technology**. 217(2012), 467-476. (SCI收录号：903YO)

33. Y. Tan*, **H. Zhang**, D. Yang, S Jiang, J Song, Y Sheng. Numerical simulation of concrete pumping process and investigation of wear mechanism of the pipe wall. **Tribology International**, 46(2012), 137-144. (SCI收录号：868PB)

2011

34. Y. Tan*, **H. Zhang**, M. Li. Modeling and simulation of abrasive flow in chemical mechanical polishing using discrete element method. **China Mechanical Engineering**. 2011, 22(5), 597-603. (CSCD)

2010

35. H. Wei, Y. Tan, **H. Zhang**, M. Li*. Numerical simulation of pressure distribution of flow field in the technology of double-sided polishing. **Chinese Journal of Applied Mechanics**, 2010, 27(03), 500-504. (CSCD)

会议论文及摘要：

2019

36. G. Wei, **H. Zhang***, Xizhong An*. CFD-DEM Study on Heat Transfer Characteristics of

Ellipsoidal Particles in the Raceway of Blast Furnace. The 14th International Conference on Gas-liquid and Gas-liquid-solid Reactor Engineering (GLS-14) , 2019, Guilin, China.

2018

37. **H. Zhang***, B. Xiong, X. An*. CFD-DEM Numerical Study on Heat Transfer Characteristics of Refuse Derived Fuel Particles in Bubbling Fluidized Bed. The 2nd International Symposium on Computational Particle Technology, 2018, Melbourne, Australia.

38. G. Wei, **H. Zhang***, X. An*, B. Xiong. CFD-DEM Study on the Raceway of Blast Furnace with non-spherical particles. Fourth National Conference of Computational Mechanics of Granular Materials (CMGM -2018), 2018, Xiamen, China.

39. G. Wei, **H. Zhang***, X. An*, B. Xiong. CFD-DEM Study on the Heat Transfer Characteristics of Refuse Derived Fuel Particles in a Bubbling Fluidized Bed. Cross-strait Particle Technology Seminar, 2018, Shenyang, China.

40. B. Xiong, **H. Zhang***, X. An*, G. Wei. PR-DNS on drag force and heat transfer of platonic particles in supercritical water. Cross-strait Particle Technology Seminar, 2018, Shenyang, China.

41. B. Xiong, **H. Zhang***, X. An*, G. Wei. PR-DNS on the drag and heat transfer of spheroids in supercritical water. Fourth National Conference of Computational Mechanics of Granular Materials (CMGM -2018), 2018, Xiamen, China.

42. C. Ke, S. Shu, **H. Zhang***, H. Yuan. Drag coefficient and averaged Nusselt number of spheroids. Fourth National Conference of Computational Mechanics of Granular Materials (CMGM -2018), 2018, Xiamen, China.

43. D. Gou, X. An*, **H. Zhang**. CFD-DEM Study on Macro- and Micro-scopic Behavior of Binary Mixtures of Spheres under Air Impact. The 8th World Congress on Particle Technology, 2018, Orlando, China.

44. X. Ye, C. Zhang, Y. Su, D. Yang, X. An, **H. Zhang**. Diagnosis and optimization of the effect of SCR denitrification flow field on escape of ammonia. First National Conference on Process Modeling and Simulation, 2018, Shanghai, China.

2017

45. Z. Xie, X. An*, H. Fu, X. Yang, **H. Zhang**. DEM dynamic modeling on the vibrated packing densification of cuboid particles with different aspect ratios. Formula IX on Multiscale Structures and Functionalities for Future Formulation, Beijing, China.

46. Q. Jia, X. An*, X. Yang, H. Fu, **H. Zhang**. MPFEM simulation on 2D compaction and solid sintering of multi-dimensional Tungsten powders. Formula IX on Multiscale Structures and Functionalities for Future Formulation, Beijing, China.

2016

47. **H. Zhang**, Y. Shao, L. Xie, W. Zhong*, A. Yu. Sedimentation of Solid Particles in a Fluid Considering Heat Transfer: A TLBM-DEM Study. The 7th International Conference on Discrete Element Methods, 2016, Dalian, China.

48. **H. Zhang**, Y. Shao, L. Xie, W. Zhong*, A. Yu. On the thermal boundary conditions of particulate-fluid systems. The 1st International Workshop on Computational Particle Technology and Multiphase Processes, 2016, Suzhou, China.

49. R. Deng, Y. Tan*, **H. Zhang**, S. Jiang, X. Xiao, C. Hu. A numerical study of the effect of loading profiles on mixing/segregation of particles in the truck mixer via DEM. The 7th International Conference on Discrete Element Methods, 2016, Dalian, China.

50. C. Ke, H. Yuan, **H. Zhang**, S. Shu*. Numerical simulation of magnetic particles motion under the effect of magnetic field. The 1st International Workshop on Computational Particle Technology and Multiphase Processes, 2016, Suzhou, China.

51. C. Ke, S. Shu*, H. Yuan, **H. Zhang**. A combined LBM-IBM-DEM for magnetic particles in a liquid with external magnetic field. The 7th International Conference on Discrete Element Methods, 2016, Dalian, China.

52. Z. Xie, X. An*, H. Fu, X. Yang, **H. Zhang**. DEM dynamic modeling on the vibrated packing densification of cuboid particles with different aspect ratios. Formula IX on Multiscale Structures and Functionalities for Future Formulation. Formula IX on Multiscale Structures and Functionalities for Future Formulation, Beijing, China.

53. Q. Jia, X. An*, X. Yang, H. Fu, **H. Zhang**. MPFEM simulation on 2D compaction and solid sintering of multi-dimensional Tungsten powders. Formula IX on Multiscale Structures and Functionalities for Future Formulation. Formula IX on Multiscale Structures and Functionalities for Future Formulation, Beijing, China.

2014

54. **H. Zhang,** F.X. Trias, A. Gorobets, A. Oliva*, D. Yang, Y. Tan, Y. Sheng. Numerical investigation on particle resuspension in turbulent duct flow via DNS-DEM: Effect of collisions. 11th World Congress on Computational Mechanics (WCCM XI). 2014. Barcelona, Spain.

55. G. Cao, **H. Zhang**, Y. Tan*, J. Wang, R. Deng, X. Xiao, B. Wu. Study on the effect of coarse aggregate volume fraction on the flow behaviour of fresh concrete via DEM. 7th World Congress on Particle Technology (WCPT7) 2014. Beijing, China.

56. C. Ke, **H. Zhang**, X. Yue, S. Shu*, Y. Tan, C. Feng. Numerical simulation of the emergency brake process in granular material transportation using DEM. 7th World Congress on Particle Technology (WCPT7) 2014. Beijing, China.

57. Y. Tan*, G. Cao, **H. Zhang**, J. Wang, R. Deng, X. Xiao, B. Wu. Study on the thixotropy of the fresh concrete using DEM. 7th World Congress on Particle Technology (WCPT7) 2014. Beijing, China.

58. Y. Tan*, X. Xiao, **H. Zhang**, S. Jiang, J. Wang, R. Deng, G. Cao, B. Wu. Numerical investigation on the effect of the particle feeding order on the degree of mixing using DEM. 7th World Congress on Particle Technology (WCPT7) 2014. Beijing, China.

2013

59. X. Yue, **H. Zhang**, C. Luo, S. Shu*, Y. Tan*, C. Feng. Parallelization of a DEM code Based on CPU-GPU heterogeneous architecture. Proceedings of 25th International Conference on Parallel Computational Fluid Dynamics 2013. Changsha, China.

60. F.X. Trias, A. Gorobets, **H. Zhang**, A. Oliva*. New differential operators and discretization methods for eddy-viscosity models for LES. Proceedings of 25th International Conference on Parallel Computational Fluid Dynamics 2013. Changsha, China.

61. Y. Tan*, J. Song, J. Wang, **H. Zhang**. Numerical investigation of wear process on the pipe wall using discrete element method. III International Conference on Particle-based Methods Fundamentals and Applications. 2013. Stuttgart,

Germany.

2012

62. **H. Zhang,** Y. Tan*, D. Yang, R. Deng, Y. Sheng. Numerical modeling of wear investigation of the pipe wall in pneumatic conveying. National bulk handling conveyor forum and new technology, new equipment Seminar 2012. Hangzhou, China.

63. **H. Zhang,** Y. Tan*, D. Yang, Y. Sheng. Eulerian-Lagrangian modeling for fluidized bed. Conference of Computational Mechanics of Granular Materials. 2012. Zhangjiajie, China.

64. F.X. Trias, **H. Zhang**, A. Gorobets, A. Oliva*. DNS and regularization modeling of a turbulent flow through a square duct up to Re_tao = 1200. Proceedings of 24th International Conference on Parallel Computational Fluid Dynamics 2012. Atlanta, USA.

65. Y. Tan*, C. Liu, **H. Zhang**, X. Xiao, M. Xu. Discrete element method simulation and experimental investigation on the cutting process of soft rock. Conference of Computational Mechanics of Granular Materials. 2012. Zhangjiajie, China.

66. S. Jiang, Y. Tan*, **H. Zhang**, D. Yang. Some applications of the discrete element method in mechanical engineering process. Conference of Computational Mechanics of Granular Materials. 2012. Zhangjiajie, China.

67. Y. Tan*, R. Deng, S. Jiang, **H. Zhang**. The numerical simulation research for concrete mixing and conveying process based on the discrete element method. Conference of Computational Mechanics of Granular Materials. 2012. Zhangjiajie, China.

2011

68. **H. Zhang**, F.X. Trias, Y. Tan, Y Sheng, A Oliva*. Parallelization of a DEM/CFD code for the numerical simulation of particle-laden turbulent flows. Proceedings of 23th International Conference on Parallel Computational Fluid Dynamics 2011. Barcelona, Spain. 1-5.

69. **H. Zhang**, F.X. Trias, Y. Tan, D. Yang, Y. Sheng, A. Oliva*. Numerical simulation of turbulent dispersed multiphase flow using discrete element method. II International Conference on Particle-based Methods Fundamentals and Applications. 2011. Barcelona, Spain.

70. Y. Tan*, **H. Zhang**, D. Yang, Y. Sheng. Some applications of discrete element method in tribology. Proceedings of 6th China International Symposium on Tribology. 2011. Lanzhou, China.

71. S. Jiang, Y. Tan*, **H. Zhang**, D. Yang, R. Deng, Y. Sheng. DEM Simulation of the Mechanical Properties of SiC Ceramic under Pre-stressing. II International Conference on Particle-based Methods Fundamentals and Applications. 2011. Barcelona, Spain.

教学奖励：

科研奖励：

社会兼职：中国颗粒学会青年理事

Peer-review journal papers:

◆ Cement and Concrete Composites

◆ Chemical Engineering & Technology

◆ CIESC Journal (化工学报)

◆ Computers & Fluids

◆ Computational and Mathematical Methods in Medicine

◆ International Communications in Heat and Mass Transfer

◆ International Journal of Heat and Mass Transfer

◆ Journal of Computational Methods in Sciences and Engineering

◆ Journal of Fluids and Structures

◆ Journal of Sediment Research (泥沙研究)

◆ Particulate Science and Technology

◆ Powder Technology

◆ Progress in Computational Fluid Dynamics, An International Journal (PCFD)

◆ Recent Innovations in Chemical Engineering

◆ World Journal of Engineering

Conference papers:

◆ International Conference on Physics, Mathematics and Statistics (ICPMS 2018)

◆ International Conference on Biological Information and Biomedical Engineering (BIBE 2018)

个人寄语：始于规则，成于精勤，止于至善

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