Dr. Haiyang Zhao

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DEGREE: Ph. D. of General Mechanics

DATE OF BIRTH: April. 20th , 1979

NATIONALITY: Chinese

PROFESSION

- Sep. 2014~Now
  Mechanical design, manufacturing and automation
  School of Mechanical Science and Engineering, Northeast Petroleum University, P. R. China
  Duty: Assistant Professor
- Apr. 2009~ Sep. 2014
  Mechanical design, manufacturing and automation
  School of Mechanical Science and Engineering, Northeast Petroleum University, P. R. China
  Duty: Lecturer
- Apr. 2006~ Apr. 2009
  Mechanical design, manufacturing and automation
  School of Mechanical Science and Engineering, Northeast Petroleum University, P. R. China
  Duty: Assistant teacher

EDUCATION

- Mar. 2010~Jul. 2014
  PH. D. of General Mechanics
  Thesis Title: Investigation of fault diagnosis and state assessment technique for bearing clearance of reciprocating compressor
  School of Astronautics, Harbin Institute of Technology, P. R. China
  Advisor: Professor. Minqiang Xu
- Sep. 2003~ Apr. 2006
  MSc of Mechanical Design and Theory
  Thesis Title: Investigation of detection and analysis technology for pressure signal collected from reciprocating compressor cylinder
  School of Mechanical Science and Engineering, Northeast Petroleum University, P. R. China
  Advisor: Professor. Jindong Wang
- Sep. 1999~ Jul. 2003

BSc of Mechanical design, manufacturing and automation,
School of Mechanical Science and Engineering, Northeast Petroleum University, P. R. China

RESEARCH INTERESTS

-Machinery fault diagnosis and condition monitoring
-Multibody dynamics analysis of mechanical equipment
-Finite element numerical analysis, computational mechanics

LIST OF PUBLICATIONS

Patents (in China):

1. (Patent of Utility Model) No. ZL201220177037.8: A double-acting stratification oil pump, 2012
2. (Patent of Utility Model) No. ZL201220346199.X: A extraction device of compressor-cylinder pressure, 2013
3. (Patent of Utility Model) No. ZL201120243792.7: A load reducing sucker rod, 2012

Technical Papers:

1. ‘A Parameters Optimization Method for Planar Joint Clearance Model and Its Application for Dynamics Simulation of Reciprocating Compressor’，Journal of Sound and Vibration，2015，334：416-433.
2. ‘A feature extraction method based on HLMD and MFE for bearing clearance fault of reciprocating compresso’r，Measurement 2016，89： 34－43.
3. ‘A feature extraction method based on LMD and MSE and its application for fault diagnosis of reciprocating compressor’，Journal of Vibroengineering，2015，17（7）：3392-4056.
4. ‘Local Mean Decomposition Based on Rational Hermite Interpolation and Its Application for Fault Diagnosis of Reciprocating Compressor’, Journal of Mechanical Engineering Vol.51,No.1, 2015
5. ‘An Improved Binary Tree SVM and Application for Fault Diagnosis’, Journal of Vibration Engineering, Vol.26,No.5, 2013
6. ‘Fault feature extraction based on multifractal and singular value decomposition for reciprocating compressors’, Journal of Vibration and Shock, Vol.32,No.23, 2013
7. ‘A Dynamic Analysis of Reciprocating Compressor Transmission Mechanism with Joint Clearance’, Applied Mechanics and Materials, Vol.226-228, 2012
8. ‘A Fault Feature Extraction Method Based on LMD and MSE for Reciprocating Compressor’ , Applied Mechanics and Materials, Vol. 530-531, 2014
9. ‘Compound Fault Diagnosis Technique Based on Artificial Neural Network and Support Vector Machine’ Fluid Machinery, Vol.36, No.1, 2008
10. ‘Fault Diagnosis Technique Based on Support Vector Machines for Cylinder and Piston System in Reciprocating Compressor’ Fluid Machinery, Vol.34, No.7, 2006
11. ‘Sucker Rod Design and Energy Conservation Analysis of Pumping System with Load Reducer’, Science Technology and Engineering, Vol.19, No.14, 2009

Research Projects:

1. Research on vibration mechanism and feature extraction methods of bearing clearance fault for reciprocating compressor, The General Financial Grant from the China Postdoctoral Science Foundation (2015M581423), 2015~2018.
2. Study on the Diagnosis and Evaluation Method of Bearing Clearance State for Reciprocating Compressor, Natural Science Foundation of Heilongjiang Province, China (E2016009), 2016~2019.
3. Feature extraction based on LMD and MSE and Its Application for Fault Diagnosis of Reciprocating Compressor ,School Cultivate Foundation Project of NEPU, 2014~2016.

4. Vibration Signal Analysis and State Assessment for Large Scale Reciprocating Compressor, Research Project of Heilongjiang Department of Education, 2012~2014
5. Feature extraction and fault diagnosis based on multifractal for reciprocating compressor, Research Project of Heilongjiang Department of Education, 2008~2010
6. Key technologies research on Environmentally pneumatic sandblasting automated production line of oil tube, Research Project of Heilongjiang Department of Education, 2008~2010

International Academic Exchanges:

1. International Conference on Vibration, Structural Engineering and Measurement(ICVSEM2012), Shanghai, China, 2012
2. The International Conference on Sensors, Instrument and Information Technology (ICSIIT 2015), Guangzhou, China, 2014

Academic Membership

Member of Vibration Engineering Society