

Jun Han, Ph.D.

1000 Smith Level Road Apt. J3

Carrboro, NC, 27510

Tel. (859) 489-5292 (H)

Email: junhan@unc.edu or junhan08@yahoo.com

Objective

To obtain a position that will best allow me to use my work experience and education so that I can contribute to a dynamic team and fulfill my professional goals.

Education

- 2001 – 2004 Ph.D., Mechanical Engineering**
School of Mechanical Engineering, Tianjin University, Tianjin, P.R.China
- 1998 – 2001 M.S., Mechanical Engineering**
College of Mechanical Engineering, Tianjin University of Science & Technology, Tianjin, P.R.China
- 1994 – 1998 B.S., Mechanical Engineering**
College of Mechanical Engineering, Tianjin University of Science & Technology, Tianjin, P.R.China

Research Experience

2008-current Postdoctoral Research Associate, Eshelman School of Pharmacy, University of North Carolina at Chapel Hill

My principal responsibility is to conduct research on pulmonary delivery using a vibrational energy-activated device and system simulation, including:

1. Multiple dry powder flow rate measurement
2. Signal recombination using Matlab
3. Establish intelligent system to determine the avalanches time of different drug powders using Matlab

2005-2008 Research Scholar, Vibro-Acoustic Consortium (VAC) at the University of Kentucky, Lexington, KY, USA.

The VAC (www.engr.uky.edu/vac) is a collection of companies (including Trane, John Deere, Caterpillar, etc.) that are dedicated to solving vibration and noise problems using virtual prototyping.

My projects and research at UK primarily concern the following topics:

1. Acoustic source identification

- Identification of aero acoustic source using the inverse boundary element

method (BEM)

- Source identification using the inverse BEM and Rayleigh Integral approach
- Coding the inverse BEM and inverse Rayleigh Integral by Matlab

2. Numerical acoustic simulation

- Predicting termination impedance using Finite Element Method and BEM
- Predicting panel transmission loss using FEM and BEM

3. Muffler simulation and measurement

- Acoustic test and analysis of Diesel Particulate Filter
- Program the intake/exhaust modeling based on plane wave theory
- Attenuation of lined duct
- Program to simulate and predict absorption of Multi-Layers Composite Materials (Foam, Fiberglass and Micro-perforated panel)
- Update the VAC toolbox

4. Measuring sound absorbing materials

- Accurate measurement of small absorption coefficients
- Measurement the ground impedance and grassplot impedance

5. Measuring sound intensity and sound power

- Simulation model and model analysis, sound intensity and power test

6. Sound absorbing material characterization using Two Load and Two Source method

7. Utilization of wavelets for acoustic purposes

- 2004-2005** **Project Director**, Simulation and Optimization of Engine Noise and Vibration, Tianjin University & Weifang Motors CO.LTD, China.
- 2003** **Research Assistant**, Research of reducing the noise of WD615 engine, Tianjin University & Weifang Motors CO.LTD, China
- 2002** **Research Assistant**, Research of reducing the noise of 493ZQ engine, Tianjin University & Jiangling Motors CO.LTD, China
- 2002** **Research Assistant**, Research of identification the noise sources of microbus, Tianjin University & Jiangling Motors CO.LTD, China
- 2001** **Research Assistant**, Research of reducing the noise of YC6108G engine, Tianjin University & Guangxi Yuchai Machinery Group, China
- 2000** **Research Assistant**, Computer visual inspection and image processing for automatic measurement system based on VC++, Tianjin University of Science & Technology & Jiamusi Paper CO.LTD, China

Experiment and Computer Skills

I have excellent programming skills and extensive programming experience with Matlab, VC++ and Fortran. In addition, I am an experienced user of Matlab,

SYSNOISE, Virtual Lab, Hypermesh, IDEAS, ANSYS, AutoCAD, Pro/E and VA One.

Awards and Honors

2003	Tianjin University Shi Shaoxi Scholarship
2003	Tianjin University Excellent Student Leader
2002	Tianjin University Outstanding Graduate
2001	Tianjin City Wang Kechang Scholarship
2000	Prize winner at National Competition of Business Plan for Science and Technology Innovation for students
2000	Award for Excellence at Competition of Business Plan for Science and Technology Innovation in Tianjin city
1999-2000	Major Award and Excellent Student honor in the university each year
1998	Excellent Graduate honored by Chinese Ministry of Light Industry, and be proposed as a graduate student in the same university without exam
1998	Tianjin City Outstanding Student Award
1995-1998	Major Award and Excellent Student honor in the university each year

Publications

1. David Herrin and **Jun Han**, Numerical simulation of exhaust system noise, Journal of Asia Auto Focus, in press.
2. **Jun Han**, David Herrin and Andrew F. Seybert, Accurate measurement of small absorption coefficients, 2007-01-2180, SAE 2007 Transactions, Journal of Passenger Cars-Mechanical Systems.
3. David Herrin and **Jun Han**, Source identification using an inverse visible element rayleigh integral approach, 2007-01-2224, SAE 2007 Transactions, Journal of Passenger Cars-Mechanical Systems.
4. Junhong Zhang, **Jun Han**, CAE process to simulate and optimize engine noise and vibration, Mechanical Systems and Signal Processing, 2006, 20(6):1400-1409,
5. Junhong Zhang, **Jun Han**, Study on active control and simulation test for vibration in turbogenerator shaft system based on continuous wavelet transform, Chinese Journal of Mechanical Engineering, 2004, 40(1): 183-187.
6. Zhiyong Hao, **Jun Han**, Identification of diesel front sound source based on continuous wavelet transform, Journal of Zhejiang University: Science, 2004, 5(9): 1069-1075.
7. Zhiyong Hao, **Jun Han**, Investigation on noise sources identification of diesel engine by means of acoustic signals analysis, Chinese Internal Combustion Engine Engineering, 2004, 25 (2): 15-22.
8. Junhong Zhang, **Jun Han**, Zhiyong Hao, Active control and simulation test for torsional vibration in turbogenerator shaft system based on wavelet transform, Proceeding of the 2004 the Eleventh World Congress in Mechanism and Machine Science, 2004, p 2120-2123.
9. Zhiyong Hao, **Jun Han**, Application of wavelet analysis technology to vibration and acoustic signal processing in internal combustion engine, Chinese Internal Combustion Engine Engineering, 2003, 24 (6): 7.

10. **Jun Han**, Zhiyong Hao, Sound intensity measurement for noise source identification in diesel engine, *Automotive Engineering*, 2003, 25(3): 272,
11. Dongpeng Yue, Zhiyong Hao, Yuehui Liu, **Jun Han**, Experimental study on noise sources identifications of diesel engine, *Chinese Journal of Mechanical Engineering*, 2004, 40(6):192-195.
12. Zhiyong Hao, Yuehui Liu, Fengrong Bi, **Jun Han**, Experimental study on the noise source identification of a diesel engine of passenger car, *Chinese Society for Internal Combustion Engines*, 2004, 22(2):150-154.
13. Zhiyong Hao, **Jun Han**, An investigation on noise source identification of a medium bus by sound intensity measurement, *Automotive Engineering (EI Source)*, 2003, 25(4):392-394.
14. **Jun Han**, Zhiyong Hao, Analysis and identification of diesel front noise source based on wavelet transform, *Automotive Engineering (EI Source)*, 2003, 25(6): 557-560.
15. Zhiyong Hao, **Jun Han**, Analysis and identification of diesel noise source of surface based on wavelet transform, *The International Congress on IC engine 2003 in China*.
16. **Jun Han**, Zhiyong Hao, Identification of diesel sound source based on the independent component analysis, *The 18th International Congress on Acoustics 2004 in Japan*.
17. **Jun Han**, Zhiyong Hao, Application of sound intensity measurement method in noise source identification of automobile, *Tianjin Automotive*, 2002, 3.

Social Activities

1. Chairman of the graduate student council, Tianjin University of Science & Technology, 1998-2001.
2. Chairman of the student council of the College of Mechanical Engineering, Tianjin University of Science & Technology, 1996-1998.

References

Prof. Michael Jay

Prof. Andrew F. Seybert

Department of Mechanical Engineering
171 Ralph G. Anderson Building
University of Kentucky
Lexington, Kentucky 40506-0503
Tel: (859) 257-6336 ext.80645
Fax: (859) 257-3304
Email: seybert@engr.uky.edu

Prof. David Herrin

Department of Mechanical Engineering

002B Ralph G. Anderson Building

University of Kentucky

Lexington, Kentucky 40506-0503

Tel: (859) 257-6336 ext.80609

Fax: (859) 257-3304

Email: dwherr01@engr.uky.edu

Prof. Zhiyong Hao

College of Mechanical and Energy Engineering

Zhejiang University, Hangzhou, China

Email: haozy@zju.edu.cn