



张蓓 Zhang Bei  
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## Personal Information

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## Research subjects

Industrial intelligent control, Embedded System, Intelligent Instruments, Information Fusion, Digital Signal Process

## Education Background

### 09/2006-07/2009 School of Electrical Engineering, Xi'an Jiaotong University

Degree: MS  
Major: Control Theory and Control Engineering  
Rank: 1<sup>st</sup> in 35 students of the department  
Main subjects: Micro-controller System & Application (A),  
System Analysis & Model Building (A)

### 09/2002---07/2006 School of Mechanical Engineering, Xi'an Jiaotong University

Major: Measurement & Control Technology & Instrumentations  
Minor: English  
Degree: BS  
Rank: 4<sup>th</sup> in 35 students of the department  
Main subjects: Intelligent Instrument Circuits (93)  
Sensing Technology (91)  
Electric Circuits (90)

## Research experiences

- ◆ **DSP based Ball-Mill controller with fuzzy-PID** **2008.01-present**  
To adopt the TMS320F2812 as the hardware core and program with the tool of CCS, having finished the code of AD, DA and communication modules and adopted the fuzzy PID as the main algorithm.
- ◆ **GSM based monitoring electric motor's protector** **2008.04-2008.09**  
To adopt the MSP430 and GSM module as the hardware core, Implementation of protection controller through wireless messages, and program with the tool of IAR and finish the software system, mainly including the error detecting, judging and processing, and the keyboard and nixie display indicators' code.
- ◆ **DSP based Ball-Mill load detective instrument** **2007.10-2008.01**  
To adopt the TMS320F2812 as the hardware core, including signal input, DA output, communications, and other external circuit, program with the tool of CCS and finish the software system, including the signal's detecting, filtering, processing and output, use ANFIS as the core algorithm.
- ◆ **Ball-Mill load detective instrument** **2007.01-2007.09**  
To adopt the PCM3350 and PCM3718 module for the hardware core, including signal conditioning, DA output, communications, and other external modules, with the tool of the Platform Builder to customize the WinCE and make the application program with embedded VC.
- ◆ **Fault Diagnosis for Pulverizing System with artificial intelligence** **2006.09-2006.12**  
The research requires the knowledge of artificial intelligence, especially the fuzzy system and neural



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network and computer technology.

◆ **Parameters' characterization of three-dimensional objects Surfaces(Undergraduate graduation thesis)**

All the programs are funded by HI-TECH RESEARCH AND DEVELOPMENT PROGRAM OF CHINA (863 Program)

**Scholarship and awards**

- ◆ 2007-2008 Outstanding graduate of Xi'an Jiaotong University
- ◆ 2006-2007 XinXing Enterprise Scholarship ( the only one in the department in the year)
- ◆ Innovation Scholarship of Xi'an Jiaotong University
- ◆ 2002-2006 Outstanding students prizes of Xi'an Jiaotong University for 3 times.
- ◆ 2002-2006 SiYuan prizes of Xi'an JiaoTong University for 3 times.

**Teaching Assistant experience**

Single chip technology

Automatic Control Theory

Micro-controller System and Application

**Papers have been accepted by Core Journals**

The development of DSP based mill-load controller

The Application of DDE communication between VB and KingView in Resistance Detector

**Professional Skills**

**Mechanical Engineering:** Fault detection, Non-destructive inspection, MEMS, Sensor and optics;

**Basic Knowledge:** Control Theory, Artificial Intelligence (Neural Networks, Fuzzy, Expert System, ANFIS etc), Information Fusion, Digital Signal Process, Circuit Design;

**Language:** C/C++, MFC, VB and M;

**Software:** Matlab, Labview, CCS, IAR, Visual studio, Platform Builder, Protel;

**Hardware:** DSP, Single chip, ARM, PCM3350.

**Social Activities**

**09/2004-05/2006** Chief of English Fans Association in Xi'an Jiaotong University

**07/2005-09/2005** internship in Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences

**Hobbies**

Traveling and Reading

## Statement

Electrical Engineering fascinates me because it is a rapidly evolving field with an immense potential for research. Looking around I observed numerous devices that were designed and constructed with electrical engineering knowledge. This filled me with a desire to be a part of this great prolific system of creativity and ingenuity.

As a graduate student in Xi'an Jiaotong University, which belongs to "211" and "985" projects, I have solid academic background of Electrical Engineering, Mechanical Engineering, and Computer Science. My present research field covers Industrial intelligent control, Embedded System, Intelligent Instruments, Information Fusion, and Digital Signal Process. I have great interest in the field and hope to further my study and research in your graduate program.

I graduated from School of Mechanical Engineering for bachelor degree with major of Measurement & Control Technology & Instrumentations. I also chose English as my minor and obtained minor diploma. I ranked forth and was granted the Excellent Student Award and scholarship annually. In 2006, my graduation paper was entitled to be an excellent paper of Xi'an Jiaotong University. After graduation, I transferred from Mechanical Engineering into School of Electrical Engineering, still in Xi'an Jiaotong University, in 09/2006 with the rank of Top One in entrance examination.

I will obtain master degree in Electrical Engineering with major of Control Theory & Control Engineering. I am the **Top One** student in the department, obtained the only one Enterprise Scholarship of the department, got Innovation Scholarship of Xi'an Jiaotong University, and was granted outstanding graduate of Xi'an Jiaotong University. I will graduate in 05/2009.

During my three-year's graduate study, I had been involved into multiple large research projects funded by HI-TECH RESEARCH AND DEVELOPMENT PROGRAM OF CHINA (863 Program), like Fault Diagnosis for Pulverizing System with Neural Networks and Expert System; the development of ball-Mill load detective instrument based on PCM3350 with Information fusion and so on. Two papers have been accepted and are to be published. The program I am operating as the Chief at present is Ball-mill controller based on DSP, which covers the knowledge of fuzzy PID, Adaptive control, DSP etc.

All of these backgrounds cultivated strong abilities in dependent thinking and solving problems and aroused my passions of pursuing a career in academic research area. During the period, what impressed me most was my five day's continual working in the lab. At the very beginning, I felt it very interesting. However, after countless failure and exhaustion, I just want to give up. Then I convinced myself to calm down and analyze the whole experiments, I told myself I should persist and maybe I can make it in another way. Then two day's later, I succeeded. After that, I know programs need not only interest and passion, but also innovation, calmness and persistence.

Besides study and research, I also like to spend some time on other activities,

which helped enrich the vision, improved my leadership skill and served me chances to experience the life out of study and research, like being a TA, organizing students to make course wares for some subjects, serving as the Chief of English Fans Association and intern in Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences (CAS). During my spare time, traveling and reading are my favorite. I appreciate Scarlett O'Hara of Gone with the Wind and one most fascinating experience during my life was being to the desert of Dunhuang to visit the Mogao Grottoes for 2 days alone.

According to my background and interest, what I want to do in the following years is to acquire the most advanced knowledge and keep myself abreast with the latest developments in my favorite field of EE. I want to further my study, expand my existing knowledge and explore how problems in electrical area can be solved. I hope I have the chance to pursue my PhD degree in the EE graduate program of your university. After obtaining my PhD degree, I prefer to be a college teacher or a researcher in lab. I am looking forward to the contribution I would make in my field after obtaining my PhD degree.

Your university has renowned faculty, milieu replete with academic activity, and advanced graduate program which is close to my specialty, therefore, it is the best choice for me to conduct my graduate studies. In addition, its beautiful environment and close contact with Xi'an Jiaotong University also play an important role when I am choosing the university to pursue my PhD degree.

If I have the honor to be admitted into your university as a PhD student, I would devote to my research work and try my best to achieve success in the field. I am confident that, with my strong passion and academic training in EE, I will be successful in my PhD study and make my best contribution to this field.

Zhang Bei