**Program: Petroleum Engineering**

A close look at my Resume will indicate that I majored in the exploitation of oil and gas fields in my undergraduate program and specialized in petroleum engineering, a similar specialty, in my Master’s program. It may well be asked why I maintain such a close affinity with petroleum. The answer is simple and straightforward—because I was born and I grew up on an oil field and I have cherished a deep love for all that it represent. Even as a child, I had a habit of watching for hours how beam-pumping units, standing as if like a miniature forest, worked, indulging myself in all kinds of fantasies and reflections about the mysterious reservoir underground with great curiosity. I imagined that someday I would be able to unveil its mysteries. With the lapse of time, I am approaching the 30th year of my age and a cursory retrospection makes me realize that, for nearly a decade, I have been making efforts toward this objective. The black petroleum continues to hold me fascinated and spellbound with its infinite attractions. In order to understand petroleum better, I consider it necessary to travel to the other side of the Pacific Ocean to improve my knowledge and expertise in petroleum research.

I am most proud that I have obtained both Bachelor’s degree and Master’s degree through 7 years of dedicated academic efforts at Beijing University of Petroleum , China’s most prestigious institution of higher learning in the field of petroleum. What made me even more proud of myself is the outstanding scholastic performance and research achievements that I accomplished. For four consecutive years during the undergraduate program, I was awarded first-class scholarship and the honor of Student of Excellence, an honor to which only 3 out of 180 students were entitled. I also won second prize for the university’s first mathematics contest and the first prize for the physics contest. My distinguished scholastic aptitudes led to a direct Master’s program waived of entrance examination. During my Master’s program, the research project I undertook Research and Fabrication of the Automatically Electrical Equipment Used for Testing the Flow Parameters of Cores won the university’s second prize for scientific and technological progress. My research paper The Application of the Thermal Resistance and Heat Capacity Operator in the Simulation of Temperature Distribution of the Surrounding Areas of Wellbore Equipped with Electrothermal Paraffin Tools such as the Electric Heating Cable or Rod won first prize at the university’s Treatise Presentation. Furthermore, I own one patent for the Automatically Electrical Instrument for Measuring the Flow Parameters of Cores and was awarded IET scholarship, the highest-level scholarship in China awarded to students who study energy sources.

By studying each course with serious interest, I gained a complete understanding, on both theoretical and practical level, of how bodies of underground oil, gas and water move and how to tap the resources that they represent. In addition, I learned how to reconstruct the distribution of underground oil, gas and water by means of numerical simulation software, how to create three-dimensional geological model of the oil reservoir, and how to prepare plans of oil field development. Whenever I succeeded in creating a three-dimensional model, or preparing the plan for oil field development, I would be very excited because I could see that my child dreams were being fulfilled one by one. And each time when I saw my research papers being published in the nation’s core periodicals and journals and wining high evaluations from experts, I could experience a great sense of achievement. So far, I have published 7 papers in such periodicals and journals (please refer to my Resume for more detailed information.)

With a view to solving practical problems, my thesis for the Bachelor’s program, The Simulation of Temperature Distribution of the Surrounding Areas of Wellbore Equipped with Electrothermal Paraffin Tools Such as the Electrical Heating Cable or Rod, was regarded by the Academic Panel of my Department as “creative”. The thesis solved the problem of the discretization of the thermodynamic equation by the numerical interpolation method. Based on this, I compiled the numerical simulation software and worked out two major problems, that of selecting the most efficient electrical cable or the electrical heating rod in order to save energy, and that of providing a foundation for the numerical simulation of heavy oil reservoir by calculating the temperature distribution in the surrounding areas of the wellbore. This software has been put into wide application in China’s two major oil fields—Qinghai Oil Field and Liaohe Oil Field. Similarly, my thesis for the Master’s program, The Simulation and Modeling about the Effect of Side-Tracked Horizontal Well and Created Fracture Used for Developing the Remaining Oil of the Top Part of the Thick Oil Layer, explored how the remaining oil in the top part of the thick oil layer can be fully exploited by means of side-tracking in the horizontal well and hydraulic fracturing of the upper parts of oil layers. In this thesis, I compiled numerical simulation software with more than 8000 lines of source codes. A scheme of numerical simulation input parameters was designed based on cross experimental design method, which realized the simultaneous optimization of multiple construction parameter variables. Since its application in Daqing Oil Field, the first major oil field in China, this software has been highly appraised. Both my undergraduate and graduate theses were rated as “Class A.”

Since the completion of my Master’s program, I have been employed by China National Petroleum Corporation where I work at its Department of Prospection and Production. As the person in charge, I have participated in a number of research and development projects. I was responsible for framing quite a few schemes of new oil field development, designing and assembling an electric automatic instrument for measuring the flow parameters of cores. In collaboration with the famous American oil reserve evaluation company DeGolyer & MacNaughton, my colleagues and I assessed and calculated the total amount of reserves owned by China National Petroleum Corporation. In addition, I designed a set of computerized automatic testing and simulation device for simulating the pressure distribution of underground fluids. Those are just some of the major responsibilities I have performed. The most valuable thing in my 4-year work experience is that I have gained an in-depth understanding of many important production processes of an oil field as well as major problems that an oil field might face. I am very happy that in my work experience I have had opportunities to practice the knowledge from my formal academic education, in addition to learning the latest knowledge and expertise. Another important thing is that I have become increasingly aware of the importance and the necessity to constantly improve my professional knowledge and skills in order to be able to solve the difficult problems that arise in actual production processes.

To keep myself abreast with the most recent international developments, I consciously availed myself of all possible opportunities to attend various conferences and special training programs. As early as my Master’s program, I launched our university’s Society of Future Petroleum Engineers, a student organization in which I acted as its president. As such, I organized Serial Lectures on the High Technologies in the 21st Century. While working at China National Petroleum Corporation, I attended quite a number of domestic and international conferences, including The 7th International Conference on Heavy Oil and Tar Sandstone Reservoir, SPE Annual Conference in 1998 (China), Seminar on the Technology of Improving Oil Recovery, Symposium on the New Technology of Oil Field Development, etc. Due to my distinguished performance in work, I was sent to the United States, Japan and other countries to receive advanced trainings and to conduct technical exchanges, especial in the field of numerical simulation. Those experiences have been vital to my career development. A byproduct of those experiences is that I formed the idea of pursuing a first-rate education in the United States.

At present, there is still a big gap between China and advanced Western countries in terms of the technology of petroleum prospection and development, especially in the development and application of super-large numerical simulation software and large-scale three-dimensional reservoir description software. China has a lot to learn from the United States which occupies a leading position in all those areas. I expect that I can undertake thorough research in a particular area under the guidance of a world-class scientist. Based on a careful consideration of the present situation in the scientific and technological development of China’s petroleum industry, I would like to focus my prospective Ph.D. program in one of the following fields: a. Reservoir Numerical Simulation; b. Reservoir Engineering; c. Well Testing.

Tulsa University is reputed for its specialty in Petroleum Engineering, which ranks top 4th in the United States. The specialty has a very strong faculty and advanced research facilities. It offers research-intensive programs and many field trips. Such an academic environment agrees very well with my academic and research interests. In my future program, I will continue to build up my theoretical knowledge, consolidate my basic skills, and learn the most recent advanced technologies. I will try to focus my program on a specific subject that will most meet the needs of China’s petroleum industry. I believe that, compared with the previous two degree programs I completed in China, my degree program in Tulsa University will be the most fruitful one.