Qiwei Zhang

Curriculum Vitae

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EDUCATION

2016 – 2019 Master of Science Major: Petrology and Economic Geology China University of Geosciences (Beijing)
Average scores: 89.5 (1/429); T: 107 G: 157+163+4.5

2012 – 2016 Bachelor of Science Major: Geology and Geophysics Complex China University of Geosciences (Beijing)
Cumulative GPA:3.89 (Top 1%)

AREAS OF INTEREST

Geodynamics modeling

Geodynamics modeling provides an essential tool to study the problems of magma generation, aggregation, and transportation, such as melting of the mantle, differentiation of primitive magma, and evolution of metallic liquids. This study field fits me very well, because I always grasp mathematical and computer knowledge quicker than most of my peers. I feel enthusiastic to deduce equations and formula, and then compile them to a computer program. I believe that I have mastered some basic skills of building a mathematical model to solve geological problems through computer programming.

Physical processes of magma generation and differentiation and related mineralization

I pursue researches in physical and thermal dynamics of bodies of magma. My interest specifically lies explicitly in the partial melting process of generating magma and how the viscosity, density, and content of volatile affect the magmatic aggregation and transportation. Besides, because greisen-type tin deposits are closely associated with fractionation process of magma and post-magmatic hydrothermal alteration, I am particularly interested in the transition process from magmatic fractionation to fluid exsolution in a magma chamber and how the metal elements like Sn and W accumulate to form ore deposits and what is the role that volatile plays in the process.

THESIS

Graduate Thesis

Crustal-mantle interaction, magmatic evolution and large scale tin mineralization in Tengchong block

Tengchong block has witnessed the evolution of the Meso- and Neo-Tethys, resulting in the early Cretaceous, late Cretaceous and Paleocene magmatic rocks and associated large-scale Sn mineralization. My study includes: (1) updating the non-negative least square algorithm to calculate the percentage of co-precipitation minerals with zircon through a Matlab program and further revealed a two-stage fractionation process in the formation of high-silica granite. (2) examining the prospects of tin mineralization through mapping the regional structure and different phase of granite. (3) Using traditional geochemical tools (Whole rock and mineral major and trace element, Sr-Nd isotope) to determine the origin of mafic rock suite in the west Tengchong block and reveal its tectonic implication.

Undergraduate Thesis

Study on the high-Uranium zircons from the Cretaceous-Paleocene granite rocks in the Tengchong block

The high-radiation damage zircon is defined as a zircon that contains uranium higher than 3000 ppm or has radiation damage higher than 3×10^{16} events/mg. In my study, analysis of Scanning Electronic Microscopy (SEM), Energy Dispersive Spectrometer (EDS), and LA-ICP-MS was applied to examine the inner structure (microfractures and inclusions) in radiation-damage zircons, and I calculated the α-decay-event dose required for amorphization in terms of a critical radionuclide concentration. Based on observation and calculation, I propose a possible forming mechanism of radiation damage zircon and further evaluates the influence of radiation damage of zircon on U-Pb dating system.

FELLOWSHIPS, HONORS, AND AWARDS

2018 **China National Scholarship (Top 1%)** MINISTRY OF NATIONAL EDUCATION
This is the highest prize for Chinese Master student.

2016 **Excellent Undergraduate's Thesis (Top 5%)** CHINA UNIVERSITY OF GEOSCIENCES(BEIJING)
I am the only student whose defense performance was over 90 points in my defense group (26 person)

2016 **1st Prize of Innovative Experimental Project (Top 1%)** CHINA UNIVERSITY OF GEOSCIENCES(BEIJING)
It is a team research competition, and I am the group leader.
2014 **Silvercorp Metals Inc Fellowship (Top 1%)** SILVERCORP METALS INC
This is the highest prize for undergraduate student in my college.
2014 **3rd Prize in Beijing Physics Competition (Top 10%)** BEIJING PHYSICAL SOCIETY

IMPORTANT EXPERIENCE

Geological research in Yunnan Province, SW China JUN – JUL IN 2015, 2016, AND 2017
During these three years, I conducted geological field research in the Tengchong block, which covers about 6,000 km^2 in the Yunnan Province. The research team of my advisor focused on the tectonic evolution of Tethys Ocean and related metallogenic processes. This project allowed me to learn various magmatic rocks suites and associated ore deposits in suture and subduction zones. Years of field experience is helpful for me to construct a big picture of geological frameworks and a better perception of magmatic and metallogenic processes.

Geological research in Fuji Mountain, Japan APR 2014
The top 7 undergraduates of my university were selected to conduct field research at Fuji Mountain. As an undergraduate, I got a rudimentary understanding of the volcanic rocks and its related structures. This trip also made me realized that geologists should not be bounded by national borders, and they travel throughout the world to find the typical phenomenon.

LAB EXPERIENCE

Whole rock major and trace element and Sr-Nd isotope APR 2017
I was trained in the Key Laboratory of Mineral Resources, Chang'an university, Xian'an, China for 6 weeks, operating on XRF spectrometer and Finnigan MAT Element mass spectrometer.

SHRIMP zircon U–Pb dating SEP 2016
I was trained in the Beijing SHRIMP center, Beijing, China for 2 weeks, operating on SHRIMP II.

LA–ICP–MS zircon U–Pb dating OCT 2016
I was trained in the State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Wuhan, China for 2 weeks, operating on GeoLas 2005 Agilent 7500a.

Field emission scanning electron microscope and Energy-dispersive X-ray spectroscopy MAY 2016
I was trained in the State Key Laboratory of Geological Processes and Mineral Resources, Beijing, China for 1 weeks, operating on Zeiss SUPPA 55 field emission scanning electron and Oxford energy disperse spectrometer.

PUBLICATIONS

Zhang, Q. W., Wang, Q. F. Li, G.J., Cui, X. L. (2018). Fractionation Process of High-Silica Magmas Through the Lens of Zircon Crystallization: A Case Study From the Tengchong Block, SW China. *Chemical Geology*, 496, 34 – 42.