

Research Internship Information Collection for Credit Evaluation

Note: Please submit research internship information to the CLIC office (shabkirk@ualberta.ca) by August 31st.

Research Internship Name: (Include name and level)

Civil Engineering Research Internship Program

Chinese Host University and Department:(e.g. Nankai University - Mechanical Engineering)

Harbin Institute of Technology- Civil Engineering

Eligibility Requirements: (e.g. Is the research internship only open to certain disciplines? Is it for undergraduates or graduates? Is it only open to third or fourth year students?)

Available for both undergraduates and graduates in the field of civil engineering

Research Internship Description: (a general description of the topic of the project and research context)

The Civil Engineering Research Internship Program is designed as a way for students interested in the courses and research work in Civil Engineering in Harbin Institute of Technology. There are two options, Course- based Program and Research-based Program. The students have the opportunities to take the courses in the field of Civil Engineering in English. The graduates will join the research groups in structures and Earthquake Engineering, Civil engineering Materials in Cold Region, Large-span special structures, Tiber structures, Geotechnical and Underground Engineering, FRP Composite and Structures, etc.

Research Internship Objectives: (a description of the learning outcomes that are expected)

The internship programme provides a variety of benefits for students who want to study in the field of Civil Engineering, which is one of the top Engineering disciplines in China.

1. Students have opportunities work at International Joint Lab with other international students.
2. Having the chance to learn the present development of Civil Engineering in China.
3. Having friendship with Chinese elites in Civil Engineering for further cooperation in the future.

Student Roles and Responsibilities: (what exactly will the student be doing)

Course-based Program:

Students can select some courses according to their interest.

Group working is required according to the content of the courses.

Research-based Program:

Students will participate into the research groups which undertake practical projects in this field.
Students need to do the research assigned by supervisor and attend the research group discussion every week.

Share the research progress or difficulties with group members to find out better solutions.

Students need to submit research report by the end of internship.

Hours per week: (how many hours will the student be working the lab per week?)

1. The students in Course- based Program are not required.
2. The students in Research-based Program are required at least 30 hours per week for lab work.

Grading: (the evaluation method used for grading students)

The grade will be evaluated by the supervisor.

Number of Internship Positions:

10-15 students per semester

Research Internship Location: (e.g. laboratory address)

No. 202 Haihe Rd., Nangang Dist. Harbin

School of Civil Engineering, Harbin Institute of Technology

Research Internship Dates: (start and end dates)

February 28-June 30 or September 1- January 10, each year

Are the dates flexible: (yes or no)

The date for Research-based Program is flexible.

Supervisor(s) Name(s) and Contact Information:

Full-time Professors & Associate Professor in the School of Civil Engineering, HIT

Administrative Contact Information (International Students Office):

Ms. Dongmei Li

College of International Education, HIT

Ms. Yurong Yang

Administrative office of School of Civil Engineering, HIT

Research Internship Code: (course code for the research internship at your university)

Website address:

HIT: www.hit.edu.cn

College of International Education: <http://StudyatHIT.hit.edu.cn>

School of Civil Engineering: <http://civil.hit.edu.cn/>

Host university application: (yes or no, if yes provide a link to the online application or copy of the application form)

Online Application: <https://hit.17gz.org/member/login.do>

Research Internship Credit: (how many credits are awarded for this research internship at your university?) **It depends on the study hours. One credit is awarded when successfully completing 16 hours study.**

Tuition fee: **13000 RMB/semester** (waived for CLIC students)

Dormitory accommodation available: **Yes**

Accommodations fee: **600 RMB/month** (waived for CLIC students)

Additional fees: (field trips, etc.)

Insurance fee: **400 RMB/semester**

Field trips arranged by the College of International Education are free.

Project 1

Quantitative characterization of pore structure and water transport in cement-based material through low-field nuclear magnetic resonance (LF-NMR) technique

Contact Information

Prof. Chunsheng Zhou

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Project Description and Objectives

The pore structure of cement-based material is rather fundamental to the important mechanical properties, durability performance as well as dimensional stability, but sensitive to the removal of pore water, which may also introduce micro-cracking and degrade its durability to a great extent. It is well recognized that the pore structure of C-S-H gel and thus cement-based material is vulnerable to drying processing. Since low-field nuclear magnetic resonance technique use the pore water as probing, it is born with great advantage to measure the mysterious pore structure of cement-based materials. From these consideration, this project mainly devotes to quantify the pore structure of sensitive cement-based material and observe its evolution along with the removal and regain of water through the low-field nuclear magnetic resonance and other techniques. It will help a lot to understand its performance during the long-term services in various ambient environments.

Eligibility Requirements

Interested students should have basic knowledge about Portland cement and cement-based materials.

Main Tasks

Characterize the pore structure of cement-based material through LF-NMR.
Quantify the anomalous water transport in sensitive pore structure of cement-based material and clarify its fundamental performance during long-term services.

Website

Lab: <http://homepage.hit.edu.cn/zhouchunsheng>

School: <http://civil.hit.edu.cn>