INTERSHIP POSITION # 1

MATERIAL SCIENCE, CHEMISTRY or CHEMICAL ENGINEERING

DATE: From the 2nd day of August 2022 to the 28th day of July 2023

AREA WITHIN THE COMPANY WHERE THE STUDENT WILL PERFORM THE INTERNSHIP: Global Research and Development, Binders Technology

POSITION PURPOSE:
Global Research and Development Department is a core team inside CEMEX RESEARCH GROUP based in Switzerland. The aim of the team involves research and development of new products and solutions for the different challenges CEMEX has as a key global player in the construction industry as well as specialized technical troubleshooting for all CEMEX operations, mainly Cement, Concrete, Aggregates and Admixtures.

PROJECT TO BE DEVELOPED: Geopolymer binders

ACTIVITIES:
- The student will develop and generate methods to understand the behavior of newly designed binder components and analyze data, transferring the acquired knowledge to be tested at lab-scale.
- The characterization of the obtained binders includes Particle Size Distribution analysis, Blaine, XRD, SEM, surface properties and reactivity, among others.

DELIVERABLES / OUTCOMES:
- The student will generate useful knowledge for supplementary materials understanding and its development.
- Determine the relationship between strength and durability performance.
- Evaluate and proof concepts by testing selected methods.
- Proposal and validation of an action mechanism model.

CAPABILITIES:
- Knowledge in instrumental equipment operation: XRD, XRF, SEM, Blaine, Particle Size Distribution, wet-chemistry techniques
- Analytical and problem-solving skills
- Understanding safe handling procedure of all chemicals
- Data analysis and technical writing
- Teamwork and communication skills

CHALLENGES:

The student will deal with a comprehensive, industrially relevant topic, from the conception to the application, will have the support of the Chemical Technology Development team and the Global Research Laboratory as well as training about the construction industry technologies, in order to have an overall view of the topic. Furthermore, the student will have the opportunity to work in the global research facility of one of the world biggest players in the construction material field.