

Empa is a materials science and technology research institution. It belongs to the ETH domain and as such is an important element in education, science and innovation in Switzerland.

The **Laboratory for Concrete and Construction Chemistry** is seeking for a

PhD student in the field of cementitious construction materials

with a Master degree in **Chemistry, Materials Science, Earth Sciences, Civil Engineering** or related fields.

The topic of the **4 years PhD project** is the study of **hydration mechanisms and properties of low-CO₂ cements based on magnesium hydroxycarbonates**.

The main objectives of this study include (i) exploring the hydration mechanism by experiments and thermodynamic modelling, (ii) identifying admixtures to control fluidity/workability and setting times, and (iii) studying mechanical properties, volume changes and durability for a range of mortar and concrete mixtures based on this class of binders.

We are looking for a creative and innovative person, who has good verbal and written knowledge of the English language. Experiences with X-ray diffraction analysis, thermogravimetry, scanning electron microscopy, vibrational spectroscopy, analysis of aqueous solutions and the knowledge of cement hydration as well as a strong background in materials science and good skills in design and operation of experimental setups are an advantage.

The student will be enrolled at ETH Zürich and supervised by Prof. Dr. Pietro Lura.

If you work independently and if you are motivated to perform scientific studies in an interdisciplinary group and eager to contribute to its scientific competence and output, then you are the person we are seeking for.

For further information please contact Dr. Frank Winnefeld, +41 58 765 45 35, frank.winnefeld@empa.ch or Prof. Dr. Pietro Lura, +41 58 765 41 35, pietro.lura@empa.ch. Applications should be accompanied by a CV, a list of publications and a letter of motivation.

Please send your application by e-mail to:

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