CRYSPOM 25

Technical Program

Wednesday, 17 September 2025

9:00 - 9:30	Registration
9:30 - 9:40	Opening CRYSPOM 25
	FUNDAMENTALS OF SALT CRYSTALLIZATION IN POROUS OR CONFINED MEDIA & IMAGING TOOLS
9:40 - 10:20	**Keynote lecture - Self similarity in salt creeping efflorescence crystallization**
10:20 - 10:40	The combined effect of additives and confinement on nucleation kinetics: synergism or antagonism?
	COFFEE BREAK
11:10 - 11:30	Relating phase transitions of confined materials and topology of pore network
11:30 - 11:50	Flow and phase behaviour of nanoconfined aqueous solutions
11:50 - 12:10	Mineral precipitation and dissolution in concrete. A modelling study of the radioactive waste disposal facility at El Cabril, Spain
	LUNCH

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CRYSTALLIZATION IN ENGINEERING PROBLEMS

13:40 - 14:20	**Keynote lecture - Tunnel lining design in expansive anhydritic claystone**
14:20 - 14:40	Role of continuous brine access on salt precipitation dynamics - Implications for injectivity and containment integrity during geological CO_2 storage
14:40 - 15:00	Concrete expansions caused by secondary ettringite crystallization during external sulphate attack (ESA)
15:00. 15:20	Deformation behaviour of a carbonate clay subjected to calcite and dolomite dissolution in acidic environment
15:20 - 15:40	CRYSPOM Meeting
17:30 - 19:30	**Guided visit to the National Museum of Catalunya's Art (MNAC Museum)**

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Technical Program

Thursday, 18 September 2025

CRYSTALLIZATION IN CRYSTALLIZATION IN HERITAGE MONUMENTS, BUILDINGS AND ARTS

9:00 - 9:40	**Keynote lecture - The problem of the salts in the conservation of the historic and artistic heritage**
9:40 - 10:00	Integrated remote sensing and machine learning for salt detection and analysis on heritage monuments
10:00 - 10:20	Understanding salt weathering in khondalite through mineralogy and microstructure
10:20 - 10:40	Study of a case of efflorescence in building constructions

COFFEE BREAK

11:00 - 11:30	Application of isotopic techniques to determine the origin of sulphate neoformation: A case study from Barberà de la Conca, Spain
11:30 - 11:50	Fluorescence-based detection of crystallization pressure in microfluidic channels

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11:50 - 12:10 Crystallization of sodium chloride in microfluidic pore systems

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12:10 - 12:30 Insights on the textural and crystallographic properties of calcite obtained through MICP using scanning 3D X-ray diffraction

LUNCH + PHOTO

CRYSTALLIZATION APPLIED TO NEW OR ADVANCED MATERIALS FOR CONSTRUCTION, BIO-ENGINEERING AND MEDICINE

14:00 - 14:40 **Keynote lecture - Learning from coral biomineralization to engineer (living) materials**

14:40 - 15:00 Engineering antimicrobial calcium phosphate nanocrystals for enhanced bone regeneration

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15:00 - 15:20 On the role of $BaCO_3$ on preventing sulphate attack on Portland cement concrete

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15:20 - 15:40	Assessment of the durability of bio-cemented sand exposed to acidic conditions by X-Ray µ-tomography
	COFFEE BREAK
16:10 - 16:30	Crystallization phenomena in the pore network of lime binders incorporating natural additives
16:30 - 16:50	Zeolite crystallization within pores as a disruptive method for developing advanced and sustainable construction materials
16:50 - 17:50	**Poster session**
20:00 - 23:00	**Workshop dinner**

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Technical Program

Friday, 19 September 2025

CRYSTAL GROWTH IN CEMENTITIOUS MATERIALS

9:00 - 9:40	**Keynote lecture - Deliquescence and hygroscopic properties of salt mixtures**
9:40 - 10:00	Multi-scale investigation and modelling of alkali-silica reaction in concrete under confinement
10:00 - 10:20	Sulphate attack and chemical damage in concrete structures in deep geological repositories for nuclear waste storage
10:20 - 10:40	Sulphate attack in cement-stabilized materials: Influence of slate-containing recycled aggregates

COFFEE BREAK

11:00 - 11:30	Pore crystallization in carbonated low-clinker cements reinforced with nonwoven textile fibers
11:30 - 11:50	High performance pore scale reactive transport model for cement-claystone and cement-iron interface interactions
12:10 - 12:30	**Closure**