

C. Romero Rodriguez  
Materials and Environment

## Employment

## Research output

### **Modelling of capillary water absorption in sound and cracked concrete using a dual-lattice approach: Computational aspects**

Singla, A., Šavija, B., Sluys, L. J. & Romero Rodriguez, C., 2022, In: Construction and Building Materials. 320, p. 1-17 17 p., 125826.

### **Plutonic Rocks as Protection Layers to Concrete Exposed to Ultra-High Temperature**

França de Mendonça Filho, F., Romero Rodriguez, C., Schlangen, E. & Copuroglu, O., 2022, In: Materials. 15, 10, 16 p., 3490.

### **Surface effects of molten slag spills on calcium aluminate cement paste**

Mendonça Filho, F. F., Rodriguez, C. R., Schlangen, E. & Copuroglu, O., 2022, In: Materials & Design. 217, p. 1-13 13 p., 110623.

### **Characterization of air-void systems in 3D printed cementitious materials using optical image scanning and X-ray computed tomography**

Chen, Y., Çopuroğlu, O., Romero Rodriguez, C., França de Mendonça Filho, F. & Schlangen, E., Mar 2021, In: Materials Characterization. 173, p. 1-18 18 p., 110948.

### **Accelerated carbonation of ordinary Portland cement paste and its effects on microstructure and transport properties**

Romero Rodriguez, C., Ye, R., Varveri, A., Rossi, E., Anglani, G., Antonaci, P., Schlangen, E. & Šavija, B., 2021, *4th International Rilem Conference on Microstructure Related Durability of Cementitious Composites: Microdurability 2020*. Ye, G., Dong, H., Liu, J., Schlangen, E. & Miao, C. (eds.). Delft University of Technology, p. 902-906 5 p.

### **Assessing strain rate sensitivity of cement paste at the micro-scale through micro-cantilever testing**

Gan, Y., Rodriguez, C. R., Schlangen, E., van Breugel, K. & Šavija, B., 2021, In: Cement and Concrete Composites. 121, p. 1-12 12 p., 104084.

### **Assessment of the self-healing capacity of cementitious materials through active thin sections**

Rossi, E., Romero Rodriguez, C., Jonkers, H. & Çopuroğlu, O., 2021, In: Journal of Microscopy. 286, 2, p. 58-62 5 p.

### **Modeling of microstructural effects on the creep of hardened cement paste using an experimentally informed lattice model**

Gan, Y., Romero Rodriguez, C., Zhang, H., Schlangen, E., van Breugel, K. & Šavija, B., 2021, In: Computer-Aided Civil and Infrastructure Engineering. 36, 5, p. 560-576 17 p.

### **Chemo-physico-mechanical properties of the interface zone between bacterial PLA self-healing capsules and cement paste**

Romero Rodriguez, C., França de Mendonça Filho, F., Mercuri, L., Gan, Y., Rossi, E., Anglani, G., Antonaci, P., Schlangen, E. & Šavija, B., 2020, In: Cement and Concrete Research. 138, 17 p., 106228.

### **Effect of different grade levels of calcined clays on fresh and hardened properties of ternary-blended cementitious materials for 3D printing**

Chen, Y., Romero Rodriguez, C., Li, Z., Chen, B., Copuroglu, O. & Schlangen, E., 2020, In: Cement and Concrete Composites. 114, 20 p., 103708.

### **Effect of printing parameters on interlayer bond strength of 3D printed limestone-calcined clay-based cementitious materials: An experimental and numerical study**

Chen, Y., Jansen, K., Zhang, H., Romero Rodriguez, C., Gan, Y., Çopuroğlu, O. & Schlangen, E., 2020, In: Construction and Building Materials. 262, 19 p., 120094.

**Elucidating the effect of accelerated carbonation on porosity and mechanical properties of hydrated Portland cement paste using X-ray tomography and advanced micromechanical testing**

Zhang, H., Rodriguez, C. R., Dong, H., Gan, Y., Schlangen, E. & Šavija, B., 2020, In: *Micromachines*. 11, 5, 14 p., 471.

**Fundamental investigation on the frost resistance of mortar with microencapsulated phase change materials**

Romero Rodríguez, C., França de Mendonça Filho, F., Chaves Figueiredo, S., Schlangen, E. & Šavija, B., 2020, In: *Cement and Concrete Composites*. 113, 12 p., 103705.

**Influence of SiO<sub>2</sub>, TiO<sub>2</sub> and Fe<sub>2</sub>O<sub>3</sub> nanoparticles on the properties of fly ash blended cement mortars**

Siang Ng, D., Paul, S. C., Anggraini, V., Kong, S. Y., Qureshi, T. S., Rodriguez, C. R., Liu, Q. F. & Šavija, B., 2020, In: *Construction and Building Materials*. 258, 11 p., 119627.

**Mechanical behavior of printed strain hardening cementitious composites**

Figueiredo, S. C., Rodríguez, C. R., Ahmed, Z. Y., Bos, D. H., Xu, Y., Salet, T. M., Çopuroglu, O., Schlangen, E. & Bos, F. P., 2020, In: *Materials*. 13, 10, 23 p., 2253.

**X-Ray Micro Tomography of Water Absorption by Superabsorbent Polymers in Mortar**

Rodriguez, C. R., Deprez, M., de Mendonca Filho, F. F., van Offenwert, S., Cnudde, V., Schlangen, E. & Šavija, B., 2020, *SAP 2019: 3rd International Conference on the Application of Superabsorbent Polymers (SAP) and Other New Admixtures Towards Smart Concrete*. Boshoff, W. P., Mechtcherine, V., Combrinck, R. & Wyrzykowski, M. (eds.). Springer Science+Business Media, Vol. 24. p. 29-37 9 p. (RILEM Bookseries; vol. 24).

**3D Concrete Printing for Structural Applications**

Bos, F., Ahmed, Z. Y., Romero Rodriguez, C. & Chaves Figueiredo, S., 2019, In: *Spool*. 6, 2 #5, p. 5-10 6 p.

**An approach to develop printable strain hardening cementitious composites**

Chaves Figueiredo, S., Romero Rodríguez, C., Ahmed, Z. Y., Bos, D. H., Xu, Y., Salet, T. M., Çopuroğlu, O., Schlangen, E. & Bos, F. P., 2019, In: *Materials and Design*. 169, 107651.

**Frost Damage Progression Studied Through X-Ray tomography In Mortar With Phase Change Materials**

Romero Rodriguez, C., Chaves Figueiredo, S., França de Mendonça Filho, F., Schlangen, E. & Šavija, B., 2019, *Proceedings of the 10th International Conference on Fracture Mechanics of Concrete and Concrete Structures*. Pijaudier-Cabot, G., Grassl, P. & La Borderie, C. (eds.). 8 p.

**Numerical investigation of crack self-sealing in cement-based composites with superabsorbent polymers**

Rodríguez, C. R., Figueiredo, S. C., Deprez, M., Snoeck, D., Schlangen, E. & Šavija, B., 2019, In: *Cement and Concrete Composites*. 104, 12 p., 103395.

**On The Role Of Soft Inclusions On The Fracture Behaviour Of Cement Paste**

Mercuri, L., Romero Rodriguez, C., Xu, Y., Chaves Figueiredo, S., Mors, R., Rossi, E., Anglani, G., Antonaci, P., Šavija, B. & Schlangen, E., 2019, *Proceedings of the 10th International Conference on Fracture Mechanics of Concrete and Concrete Structures*. Pijaudier-Cabot, G., Grassl, P. & La Borderie, C. (eds.). 8 p.

**Modeling water absorption in cement-based composites with SAP additions**

Romero Rodriguez, C., Chaves Figueiredo, S., Schlangen, E. & Snoeck, D., 26 Feb 2018, *Computational Modelling of Concrete Structures: Proceedings of the Conference on Computational Modelling of Concrete and Concrete Structures*. Meschke, G., Pichler, B. & Rots, J. G. (eds.). CRC Press, p. 295-304

**Modelling strategies for the study of crack self-sealing in mortar with superabsorbent polymers**

Romero Rodriguez, C., Chaves Figueiredo, S., Snoeck, D., Šavija, B. & Schlangen, E., 2018, *Proceedings of the Symposium on Concrete Modelling: CONMOD2018 27-30 August 2018 – Delft, Netherlands*. Schlangen, E., de Schutter, G., Šavija, B., Zhang, H. & Romero Rodriguez, C. (eds.). Rilem, Vol. PRO 127. p. 333-341 (Rilem proceedings; no. PRO 127).

**Proceedings of the Symposium on Concrete Modelling: CONMOD2018 27-30 August 2018 – Delft, Netherlands**

Schlangen, E. (ed.), De Schutter, G. (ed.), Šavija, B. (ed.), Zhang, H. (ed.) & Romero Rodriguez, C. (ed.), 2018, Delft: RILEM Publications S.A.R.L. 520 p. (RILEM proceedings; vol. PRO 127)

**Induction healing of concrete reinforced by bitumen-coated steel fibres**

Romero Rodriguez, C., Chaves Figueiredo, S., Chiaia, B. & Schlangen, E., 2016, *9th International Conference on Fracture Mechanics of Concrete and Concrete Structures: Berkeley, California USA*. Saouma, V., Bolander, J. & Landis, E. (eds.). 8 p.

## **Activities**

**4th International Conference on ServiceLife Design for Infrastructures (Event)**

Guang Ye (Editor), Claudia Romero Rodriguez (Editor), Hongzhi Zhang (Editor) & Branko Šavija (Editor)  
27 Aug 2018 → 30 Aug 2018