

REFERENCES

- Ahmed, G.H. (2019) 'A review of "3D concrete printing": Materials and process characterization, economic considerations and environmental sustainability', *Journal of Building Engineering*, 66:105863.
- Buswell, R.A., Leal De Silva W.R., Jones, S.Z. and Dirrenberger, J. (2018) '3D printing using concrete extrusion: A roadmap for research', *Cement and Concrete Research*, 112, pp. 37-49.
- Benbow, J.J., Jazayeri, S.H. and Bridgwater, J. (1991) 'The flow of pastes through dies of complicated geometry', *Powder Technology*, 65, pp. 393-401.
- Roussel, N. (2018) 'Rheological requirements for printable concretes', *Cement and Concrete Research*, 112, pp. 76-85.
- Panda, B., Lim, J.H. and Tan, M.J. (2019) 'Mechanical properties and deformation behaviour of early age concrete in the context of digital construction', *Composites Part B: Engineering*, 165, pp. 563-571.
- Perrot, A., Rangeard, D. and Pierre, A. (2016) 'Structural built-up of cement-based materials used for 3D-printing extrusion techniques', *Materials and Structures*, 49(4), pp. 1213-1220.
- Roussel, N. and Cussigh, F. (2008) 'Distinct-layer casting of SCC: The mechanical consequences of thixotropy', *Cement and Concrete Research*, 38(5), pp. 624-632.
- Le, T.T., Austin, S.A., Lim, S., Buswell, R.A., Law, R. and Gibb, A.G.F. (2012) 'Hardened properties of high performance printing concrete', *Cement and Concrete Research*, 42(3), pp. 558-566.
- Siddika, A., Mamun, M.A.A., Ferdous, W., Saha, A.K. and Alyousef, R. (2019) '3D-printed concrete: applications, performance, and challenges', *Journal of Sustainable Cement-Based Materials*, 9(3), pp. 127-164.
- Espinosa-Marzal, R.M. and Franke, L. (2006) 'Influence of the age and drying process on pore structure and sorption isotherms of hardened cement paste', *Cement and Concrete Research*, 36, pp. 1969-1984.

- Zhang, Y., Liu, G., Yang, Y., Wu, M. and Pang, B. (2018) 'Fresh properties of a novel 3D printing concrete ink', *Construction and Building Materials*, 174, pp. 263-271.
- Chen, M., Li, L., Zheng, Y., Zhao, P., Lu, L. and Cheng, X. (2018) 'Rheological and mechanical properties of admixtures modified 3D printing sulphoaluminate cementitious materials', *Construction and Building Materials*, 189, pp. 601-611.
- Jiao, D., Shi, C., Yuan, Q., An, X., Liu, Y. and Li, H. (2017) 'Effect of constituents on rheological properties of fresh concrete-A review', *Cement and Concrete Composites*, 83, pp. 146-159.
- Roussel, N.A. (2006) 'Thixotropy model for fresh fluid concretes: Theory, validation and applications', *Cement and Concrete Research*, 36(10), pp. 1797-1806.
- Lecompte, T. and Perrot, A. (2017) 'Non-linear modeling of yield stress increase due to SCC structural build-up at rest', *Cement and Concrete Research*, 92, pp. 92-97.
- Moelich, G.M., Kruger, J. and Combrinck, R. (2020) 'Plastic shrinkage cracking in 3D printed concrete', *Composites Part B: Engineering*, 200:108313.
- Wolfs, R.J.M., Bos, F.P. and Salet, T.A.M. (2019) 'Hardened properties of 3D printed concrete: The influence of process parameters on interlayer adhesion', *Cement and Concrete Research*, 119, pp. 132-140.
- Aman, A.M.N., Selvarajoo, A., Lau, T.L. and Chen, W. (2022) 'Biochar as Cement Replacement to Enhance Concrete Composition Properties', *Energies*, 15(20):7662.
- Bhatia, S.K., Palai, A.K., Kumar, A., Bhatia, R.K., Patel, A.K., Thakur, V.K., and Yang, Y.H. (2021) 'Trends in Renewable Energy Production Employing Biomass-Based Biochar', *Bioresource Technology*, 340:125644.
- Yaashikaa, P.R., Kumar, P.S., Varjani, S. and Saravanan, A. (2020) 'A Critical Review on the Biochar Production Techniques, Characterization, Stability and Applications for Circular Bio-economy', *Biotechnology Reports*, 28:e00570.
- Suarez-Riera, D., Restuccia, L. and Ferro, G.A. (2020) 'The Use of Biochar to Reduce the Carbon Footprint of Cement-Based Materials', *Procedia Structural Integrity*, 26, pp. 199-210.

- Gupta, S. and Kua, H.W. (2018) 'Effect of Water Entrainment by Pre-Soaked Biochar Particles on Strength and Permeability of Cement Mortar', *Construction and Building Materials*, 159, pp. 107-125.
- Zeidabadi, A.Z., Bakhtiari, S., Abbaslou, H. and Ghanizadeh, A.R. (2018) 'Synthesis, Characterization and Evaluation of Biochar from Agricultural Waste Biomass for Use in Building Materials' *Construction and Building Materials*, 181, pp. 301-308.
- Tan, K., Wang, T., Zhou, Z. and Qin, Y. (2021) 'Biochar as a Partial Cement Replacement Material for Developing Sustainable Concrete', *Journal of Materials in Civil Engineering*, 33(12).
- Fallianoa, D., Restucciaa, L. and Ferroa, G.A. (2022) 'Biochar addition for 3DCP; A preliminary study', *Procedia Structural Integrity*, 41, pp. 699-703.
- Selvarajoo, A. (2021) 'Slow Pyrolysis of Durio Zibethinus Rind and the Influence of Carbonization Temperature on Biochar Properties', *IOP Conference Series, Material Science and Engineering*, 1092:012042.
- Maljaee, H., Paiva, H., Madadi, R., Tarelho, L.A.C, Morais, M. and Ferreira, V.M. (2021) 'Effect of Cement Partial Substitution by Waste-Based Biochar in Mortars Properties', *Construction and Building Materials*, 301:124074.
- Gupta, S., Tulliani, J. and Kua, H.W. (2021) 'Carbonaceous admixtures in cementitious building materials: Effect of particle size blending on rheology, packing, early age properties and processing energy demand', *Science of the Total Environment*, 807(25):150884.
- Akhtar, A. and Sarmah, A.K. (2018) 'Novel Biochar-Concrete Composites: Manufacturing, Characterization and Evaluation of the Mechanical Properties', *Science of the Total Environment*, 616, pp. 408-416.
- Praneeth, S., Guo, R., Wang, T., Dubey, B.K. and Sarmah, A.K. (2020) 'Accelerated Carbonation of Biochar Reinforced Cement-Fly Ash Composites: Enhancing and Sequestering CO₂ in Building Materials', *Construction and Building Materials*, 244:118363.

Shuo-Dai, A., Huajun, Z., Munan, Z., Qisheng, W., Zhifeng, Y., Hao, Q. and Sudong, H. (2021) ‘Stability of steel slag as fine aggregate and its application in 3D printing materials’, *Construction and Building Materials*, 299:123938.

Qian, Y., Binrong, Z., Xuesen, L., Lingqi, M., Jingming, C. and Yamei, Z. (2023) ‘Investigation of the rheological and mechanical properties of 3D printed eco-friendly concrete with steel slag’, *Journal of Building Engineering*, 72:106621.

Liu, J., Yu, B. and Wang, Q. (2020) ‘Application of steel slag in cement treated aggregate base course’, *Journal of Cleaner Production*, 269:121733.

Guo, Y., Xie, J., Zhao, J. and Zuo, K. (2019) ‘Utilization of unprocessed steel slag as fine aggregate in normal and high-strength concrete’, *Construction and Building Material*, 204, pp. 41-49.

Ma, G., Li, Z. and Wang, L. (2018) ‘Printable properties of cementitious material containing copper tailings for extrusion based 3D printing’, *Construction and Building Materials*, 162, pp. 613-627.

Le, D.H., Sheen, Y.N. and Bui, Q.B. (2017) ‘An assessment on volume stabilization of mortar with stainless steel slag sand’, *Construction and Building Materials*, 155, pp. 200-208.

Zhang, C., Nerella, V.N., Krishna, A., Wang, S., Zhang, Y., Mechtcherine, V. and Banthia, N. (2021) ‘Mix design concepts for 3D printable concrete: A review’, *Cement and Concrete Composites*, 122, pp. 104-155.

Nicolas, R., Richard, B., Nicolas, D., Irina, I., Temitope, K.J., Dirk, L., Viktor, M., Romain, M., Arnaud, P., Ursula, P., Lex, R., Dietmar, S., Timothy, W., Rob, W. and Wenqiang, Z. (2022) ‘Assessing the fresh properties of printable cement-based materials: High potential tests for quality control’ *Cement and Concrete Research*, 158:106836.

Kaliyavaradhan, S.K., Ambily, P.S., Prem, P.R. and Ghodke, S.B. (2022) ‘Test methods for 3D printable concrete’, *Automation in Construction*, 142:104529.

ASTM, (2008) C230, *Standard Specification for Flow Table for Use in Tests of Hydraulic Cement*. West Conshohocken, PA: ASTM International.

ASTM, (2005) D2573, *Standard test method for field vane shear test in saturated fine-grained soils*. West Conshohocken, PA: ASTM International.

ASTM, (2006) D2166, *Standard Test Method for Unconfined Compressive Strength of Cohesive Soil*. West Conshohocken, PA: ASTM International.

ASTM, (2006) C403, *Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance*. West Conshohocken, PA: ASTM International.

ASTM, (2007) C109, *Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)*. West Conshohocken, PA: ASTM International