

# Curriculum Vitae

## A. V. Rahul

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### Current affiliation (Jan 2020 – Present)

A. V. Rahul is currently a **postdoctoral researcher at the department of structural engineering and building materials, Ghent University, Belgium**. His current research is on developing sustainable 3D printable cementitious materials for marine applications.

### Education

Degree	University	Year	CGPA /percentage
Ph.D. <i>Title: Development of cementitious materials for extrusion-based 3D printing</i> Advisor: Prof. Manu Santhanam Co-advisor: Dr. Atul Narayan	Indian Institute of Technology Madras, India	Jul 2016 – Mar 2020	9.40 CGPA
Master of Technology (construction technology and management)	National Institute of Technology Karnataka, India	Jun 2011- Jun 2013	8.60 CGPA

Bachelor of Technology (civil)	Government Engineering College Thrissur, India	Jun 2007- Jun 2011	68.38 %
Higher secondary school	Gregorian Public School, India	Jun 2005- Jun 2007	86.80 %

## Previous teaching/research experience

From 2013 to 2016, A. V. Rahul worked as an Assistant Professor in the college, Federal Institute of Science and Technology, India. During this period, he handled courses like engineering mechanics, the strength of materials, building materials, and concrete technology for undergraduate civil engineering students.

## Research areas

- Rheology of cement-based materials
- Concrete 3D printing
- Thermodynamic-based constitutive modelling

## Journal Publications/patents

### Journal papers

- JP1.** Rahul, A. V., Manu Santhanam, Hitesh Meena, and Zimam Ghani. "3D printable concrete: Mixture design and test methods." *Cement and Concrete Composites* 97 (2019): 13-23
- JP2.** Rahul, A. V., Manu Santhanam, Hitesh Meena, and Zimam Ghani. "Mechanical characterization of 3D printable concrete." *Construction and Building Materials* 227 (2019): 116710.
- JP3.** Rahul, A. V., Abhishek Sharma, and Manu Santhanam. "A desorptivity-based approach for the assessment of phase separation during extrusion of cementitious materials." *Cement and Concrete Composites* 108 (2020): 103546.

- JP4. Rahul, A. V.,** and Manu Santhanam. "Evaluating the printability of concretes containing lightweight coarse aggregates." *Cement and Concrete Composites* 109 (2020): 103570.
- JP5. Rahul, A. V.,** S. P. Atul Narayan, Manu Santhanam, and Narayanan Neithalath. "A thermodynamic framework for modelling thixotropic yield stress fluids: Application to cement pastes." *Journal of Non-Newtonian fluid mechanics (under review)*.
- JP6.** Mohan, M. K., **A. V. Rahul,** Kim Van Tittelboom, and Geert De Schutter. "Rheological and pumping behaviour of 3D printable cementitious materials with varying aggregate content." *Cement and Concrete Research (under review)*.
- JP7.** Bhattacharjee, Shantanu, **A. V. Rahul,** and Manu Santhanam. "Development of digital fabrication methods for construction." *Indian Concrete Journal (under review)*.
- JP8.** Fathima, S.M., Manu Santhanam, and **A. V. Rahul.** " The effect of specimen size on deterioration due to external sodium sulphate attack in full immersion studies." *Cement and Concrete composites (under review)*.

### Patents (in preparation)

- P1.** Provisional patent filing is under process - 'Mixture formulation for a 3D printable concrete with expanded clay aggregates of 8 mm nominal maximum size for a piston pump based concrete 3D printer'.

## References

- Prof. Manu Santhanam  
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