

# S. Vaishnav Kumar

Doctoral Research Scholar

Department of Civil Engineering (BTCM division)

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## **Educational Qualifications:**

Degree	Specialization	Board / University	Year	CGPA
Ph.D.	Building Materials	IIT - Madras	Perusing	
M.Tech	Construction Technology and Management	IIT - Madras	2016	8.62 /10.00
B.Tech	Civil Engineering	NIT - Tiruchirappalli	2014	8.34 /10.00
AISSE (Class XII)	Computer Science	CBSE	2010	93.2 %
AISSE (Class X)	Science	CBSE	2008	83%

## **Publications:**

Chaunsali and Kumar S.V. "Calcium sulfoaluminate-belite cements: Opportunities and challenges", The Indian Concrete Journal, Feb 2020.

## **Work Experience:**

<b>Larsen &amp; Toubro,</b> Head Quarters, Chennai	<b>Sr. Engineer,</b> Procurement	Apr '17 – Nov '17
<ul style="list-style-type: none"><li>Identifying the technical and contractual requirements of the project and conduct a preliminary technical pre-bid qualification for the vendors.</li><li>Worked on rate analysis for various activities to support the commercial negotiations.</li></ul>		
<b>Larsen &amp; Toubro,</b> Borivali, Mumbai	<b>Sr. Engineer,</b> QA/QC on site	Sept '16 – Apr '17
<p>Worked at the Oberoi Sky City Project, construction of a residential building complex with 4 towers of 60 stories each as a part of the first phase.</p> <ul style="list-style-type: none"><li>Quality control at site for the execution of works at Tower D with the floor area of about 500 m<sup>2</sup>.</li><li>Designing and optimizing the concrete mixture proportion for concrete of grade M40 to M80 for the super structure and M50 grade temperature-controlled concrete for mass concreting for the raft foundation.</li></ul>		

**Others:**

NPTEL, IIT Madras Characterization of Construction Materials	Teaching Assistant	Jan'20 – May'20
NPTEL, IIT Madras Advanced Concrete Technology	Teaching Assistant	July'19 – Dec'19
NPTEL, IIT Madras Advanced Concrete Technology	Teaching Assistant	July'18 – Dec'18

**Academic Achievements:**

- Received the **Sahara Scholarship** from NCC, for professional courses in the year 2012.
- Received **Certificate of Merit** from CBSE for being in the top 0.1% in AISSCE for Physics in 2010.
- Received **PTA Merit Scholarship** from Kola Perumal Chetty Vaishnav senior secondary school, for Proficiency in Physics in 2009.

**Research projects:****Calcium Sulfoaluminate (CSA) Cements: Synthesis and Properties** (Currently working)

- Synthesis of CSA based binders from reagent grade materials and extending to synthesis by using locally available industrial by products.
- Understanding the influence of supersaturation of sulfates on the expansion characteristics of CSA based binders.
- Investigation of CSA on the mechanical and durability characteristics of concrete.

**Stress - strain characteristics of high strength concrete** (M.Tech Thesis)

- The evolution of compressive strength and elastic modulus, of concretes of grade from M30 to M80 were studied at different ages.
- Obtaining the complete stress-strain response of concrete with a strain controlled closed loop test set up

**Study of Energy Dissipation in Thin Webbed Plate Girders** (B.Tech Thesis)

- Finite element (FE) model of a thin webbed plate girder was created and analyzed using commercial software package ABAQUS.
- Validation of the FE model was done using experimental results from literature.
- The energy dissipation capacity of the plate girder was compared to that of a hot - rolled section of similar aspect ratio, when subjected to dynamic loading.

**Research Interests:**

Cement Chemistry, Synthesis of cement, Thermodynamic and microstructure modeling of cement hydration

**Relevant Coursework:**

Cement Chemistry (CE6040), Characterization of Construction Materials (CE5950), Modern Techniques of Material Characterization (MM5020), Advanced Concrete Technology (CE6110), Modern Construction Materials (CE5010), Sustainable Construction (CE5014), Maintenance and Rehabilitation of Constructed Facilities (CE5120).

**Software worked with:**

AutoCAD, STAAD Pro V8i, Revit Architecture, ABAQUS, Microsoft Office

**Positions of responsibility:**

- Secretary PG, Civil Engineering Association (CEA), 2018, IIT Madras.
- Coordinator, Campus Placement Committee - 2010, NIT – Tiruchirappallai
- Coordinator, Moments 2010 – Technical Symposium of CEA, NIT – Tiruchirappallai

**Personal Details:**

Date of Birth	15 <sup>th</sup> January, 1993
Gender	Male
Languages known	English, Hindi, Tamil
Correspondence address:	BSB 209, Department of Civil Engineering, IIT Madras, Chennai, TN, 600036
Interests/ Hobbies	Reading novels, following educational YouTuber channels, watching movies