

# Sarath Menon

Curriculum Vitæ

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## EDUCATION

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2017 - Present **Doctoral Candidate**  
*Atomistic Modelling and Simulation*  
*ICAMS, Ruhr University Bochum*

2017 **Master of Science**  
*Materials Science and Simulation*  
*ICAMS, Ruhr University Bochum*

2012 **Bachelor of Technology**  
*Mechanical Engineering*  
*National Institute of Technology*  
*Calicut, India*

## RESEARCH EXPERIENCE

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AUGUST 2017 – PRESENT

### Doctoral project : Nucleation and growth during solidification in metals and alloys

*ICAMS, RUB, Germany*

Study of nucleation and growth during solidification from an atomistic level using transition interface sampling, a rare event simulation method. Focus is on the study of nucleation in BCC metals and binary metal-semiconductor alloys.

APRIL 2016 – MAY 2017

### Student Assistant, Atomistic Simulation of Kinetics of Phase Transformation Group

*Atomistic Simulation and Modelling, ICAMS, Ruhr University Bochum*

Developing and testing of a python wrapper for transition interface sampling. Work responsibilities including developing code to implement the method, testing of the code, maintaining a repository and wiki, creating examples and tutorials.

DEC 2016 – MAY 2017

### Master Thesis : Transition path sampling of seeded nucleation during solidification in Ni

*ICAMS, RUB, Germany*

Studied the changes in nucleation mechanism, shape and size of crystal structures nucleated etc. in the presence of pre-structured seeds in under-cooled liquid nickel using transition path sampling, an atomistic simulation method.

## WORK EXPERIENCE

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AUG 2012 – MAY 2014

### Assistant Manager, Production, Light Commercial Vehicles Axles

*Tata Motors Ltd.*

Monitoring and planning for daily production, inventory, productivity, cost and quality targets. Identification of customer quality issues and effective resolution.

## PUBLICATIONS

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**Role of pre-ordered liquid in the selection mechanism of crystal polymorphs during nucleation.** Sarath Menon, Grisell Díaz Leines, Ralf Drautz, Jutta Rogal, *J. Chem. Phys.* 153, 104508 (2020)

**pyscal: A python module for structural analysis of atomic environments.** Sarath Menon, Grisell Díaz Leines, Jutta Rogal, *Journal of Open Source Software*, 4(43), 1824 2019.

## SOFTWARE PROJECTS

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**pyscal:** python module using C++ for fast calculations of various parameters that can be used to characterize local atomic environment. Developed by Sarath Menon, Grisell Díaz Leines and Jutta Rogal. [github.com/srmnitc/pyscal](https://github.com/srmnitc/pyscal).

**pylammpsmpi:** python module for parallel LAMMPS calculations from interactive environments. Developed by Sarath Menon and Jan Janssen. [github.com/pyiron/pylammpsmpi](https://github.com/pyiron/pylammpsmpi).

## LANGUAGE PROFICIENCY

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FLUENT English, Malayalam  
B1 German  
A1 Spanish

## REFERENCES

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### Prof. Dr. Ralf Drautz

*Managing director and Chair, Atomistic modelling and simulation*

ICAMS, Ruhr University Bochum

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### Dr. Jutta Rogal

*Research group Leader, Atomistic simulation of the kinetics of phase transformations*

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