

**Dr. U. SAI BABU**

*Deformations Mechanisms and Modelling Group  
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## EDUCATION

- Ph.D. (March 2018), *Materials engineering department*, Indian Institute of Science, Bangalore *Karnataka, India*  
Thesis: Atomistic Simulation of Grain Boundary Effects on Cascade Damage in Vanadium  
Advisor: Prof. S.Karthikeyan (karthik@iisc.ac.in)
- M.Tech (May 2008), *Materials engineering department*, Indian Institute of Science, Bangalore *Karnataka, India*
- B.Tech. (May 2006), Metallurgical and Materials Engineering, NIT, Warangal, AP, India.

## AWARDS

- All India 4<sup>th</sup> Rank - GATE (Graduate Aptitude Test in Engineering) – 2005
- Andhra Pradesh State 7<sup>th</sup> Rank - ECET (Engineering Common Entrance Test) – 2002
- Got interview call from National Institute of Industrial Engineering (NITIE)
- Selected for the job of graduate engineer in Vizag steel plant
- Selected for the job of graduate engineer in Zindal steel plant in campus interview
- Organized workshop on computational material science in IISc Bangalore
- Member of International Conference on Strength of Materials (ICSMA 16) organizing committee, IISc Bangalore
- Participated in All India Materials quiz-2005 conducted by ASM international, IIT Chennai chapter
- Student member of Indian society for technical education, NIT Warangal for the year 2002-03

## AREAS OF EXPERTISE

- Nuclear materials; Electrocatalysis; Transition Metal Oxides; Lithium-ion Batteries; Atomic simulation; Molecular dynamics, DFT; Python, Matlab

## WORK EXPERIENCE

- Research associate in Electrochemistry group, SSCU department, Indian institute of science Bangalore
- Research analyst, Smart analyst, Gurugaon, India
- Supervisor, non-destructive testing division, MIDHANI, Hyderabad.
- Supervisor, casting division, kushalava industries, Nuzivid (A.P.)

## TEACHING EXPERIENCE

- Worked as Teaching Assistant for M.Tech lab course in materials engineering department, IISc
- Taught course on atomistic simulations in workshop conducted by NRCM workshop on Molecular Dynamics and Monte Carlo Methods at materials engineering department, IISc
- Taught Engineering materials and manufacturing technology in GATE coaching centers
- Taught high school physics in reputed schools and international schools in Bangalore

## RESEARCH EXPERIENCE

1. Atomistic Simulation of Grain Boundary Effects on Cascade Damage in Vanadium [Work done at DMMG group of materials engineering department, IISc as a part of Ph.D. Thesis]
2. DFT study of tuning Rutile oxides and transition metal based perovskites thin films for oxygen evolution reaction [Work done at electrochemistry group of SSCU department, IISc as a Research Associate]
3. Computational study of the problem of filamentation in solid electrolytes [Work done at electrochemistry group of SSCU department, IISc as a Research Associate]
4. Diffusion of Na along grain boundaries in Na-O<sub>2</sub> batteries [Work done in collaboration with Computational Physics of Nano Materials group at Department of Physics, Boise State University, Boise]
5. Effect of Boron Addition on Microstructure and Mechanical Properties of Cast Ti-6Al-4V [Work done at DMMG group of materials engineering department, IISc as a part of Master's thesis]

## CONFERENCES AND PUBLICATIONS

- Role of grain boundary character in radiation damage accumulation in Vanadium bicrystals (*Manuscript to be communicated*)
- Sink strength of <001> symmetrical tilt grain boundaries in Vanadium, Tungsten and Iron (*Manuscript to be communicated*)
- Point defect energetics in Vanadium <001> STGBs (*Manuscript under preparation*)
- Artificially tuned Layered Transition Metal Oxide Heterostructures and Surfaces for Improved Eletrocatalytic Efficiency: DFT study (*Manuscript under preparation*)
- Presented a poster in International conference (ICSMA 16) at Indian Institute of Science, Bangalore
- Presented a Poster in National Metallurgist day, Title: Development of displacement cascade damages in the presence of Grain boundaries
- Presented a technical paper in Composit 2003, IIT Kharagpur
- Presented a technical paper in IIT Roorkie 2004

## REFERENECS

### Prof.S. Karthikeyan

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### Prof.T.A. Abhinandanan

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