PRASHANT KUNJAM

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Education

M.Tech (Research) in Aerospace Engineering 2020
Indian Institute of Science (IISc), Bangalore

- *Dissertation title*: "Optimal Numerical Integration Method for Higher-Order Polygonal Finite Elements and its Application in Microstructure Modeling"
  Advisor: Dr. D. Roy Mahapatra, Associate Professor, IISc

Bachelor of Engineering in Mechanical Engineering 2016
O.P. Jindal University (OPJU), Raigarh

Research Experience

Indian Institute of Science(IISc) Karnataka, India
M.Tech (Research) Scholar 2017 – 2020
Responsible for development of the numerical method and modeling of microstructure

- Developed a new numerical integration method for two-dimensional polygonal finite elements.
- Developed a novel method of microstructure reconstruction based on statistical parameters.
- Quantification of structure-property correlation for alloy microstructure.

National Aerospace Laboratories(NAL) Karnataka, India
Summer Research Intern 2014 – 2014

- Learned and assisted in conducting impact tests carried out in Impact and Crashworthiness facility.
- Finite element modeling of structural mechanics problems using Hypermesh and NASTRAN.

Industrial Experience

Bhilai Steel Plant, Steel Authority of India Limited (SAIL)
Summer Industrial Trainee for two months 2015

- Learned maintenance practices conducted in Gas Cleaning Plant.
- Practical exposure of rail manufacturing, casting, and heat treatment techniques used in Bhilai Steel Plant.

Conference Presentations

- Poster presentation on "Stress Localization in Titanium Alloy Microstructure due to Grain Orientation Anisotropy", International Conference on Advanced Materials and Processes for Defence Applications (ADMAT), 2019
- Oral presentation on "Stress Localization in Titanium Alloy Microstructure due to Grain Orientation Anisotropy" in Innovation Pavillion Contest held by ADMAT, 2019

Fellowship

- MHRD scholarship for qualifying Graduate Aptitude Test in Engineering (GATE) in 2017

Relevant Courseworks

- Finite element method
- Linear algebra
- Fracture mechanics
- Design and analysis of composites
- Non-destructive evaluation and techniques
- Flight vehicle structures

Technical Skills

- Matlab
- Fortran
- Machine Learning
- Finite Element Analysis
- MS Office

Manuscripts in preparation

1. Prashant Kunjam, Satyendra Singh, Sundarajan Natarajan, Stephen P. Bordas, D. Roy Mahapatra, "Generalization of Optimal Extended Finite Element Computation with Higher Order Polygons”
2. Prashant Kunjam, K. Shashidhar, S. Rakesh, D. Roy Mahapatra, “Stochastic modelling of polygonal microstructure of alloy using representative microscopic images”
3. Prashant Kunjam, K. Shashidhar, Mohammed Javeed Akhter, S. Rakesh, D. Roy Mahapatra “Effect of grain orientation statistics on effective properties of titanium alloy microstructure and its correlation”

References

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Mahesh K Bhiwapurkar, Professor
Department of Mechanical Engineering, O.P. Jindal University
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Deepa Sakravarthini, Senior Scientist
CSIR-National Aerospace Laboratories, Bangalore
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