Dr. Parameswara Rao Nakkina

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Objective

Seeking a challenging engineering role in a process, product or technology development company which will help further enhance my skills in system engineering and help me contribute towards the organization's growth

Professional Summary

- ***Doctoral degree*** in thermal engineering with more than ***3 years of experience in energy industry*** involving basic and detailed engineering design, development, optimization, test rig development etc. and ***more than 5 years of research experience*** with India's leading technical university
- Experience in ***2D and 3D modeling*** using ***advanced CAD software*** like ***Solid Edge***
- Experience in performing ***heat balance calculations*** using 1D hand calculations and software based calculations to estimate ***pressure loss*** and ***temperature distribution***
- Experience in ***preparing technical specifications*** and ***preparation of data sheets***
- Experience in ***overall project management*** including responsibility as ***engineering point of contact*** with external vendors, contractors, sourcing, safety, marketing and Technical Regulations and Standards (TR&S) teams
- Experience in ***Computational Fluid Dynamics (CFD)***
- Experience in ***review of casting*** drawings
- Experience in defining ***hardware and software package for data acquisition***, ***creation of test plans*** with acceptance criteria, ***analysis of test data*** and representing engineering in toll gate review process
- Experience in ***design, design optimization, prototype development, parts ordering, test rig development and optimization, running tests, data analysis*** etc.
- Designed and tested ***diffuser*** and ***sparger*** to reduce the steam vent noise
- Point of contact for ***simulation and modeling*** team to define modeling and simulation requirements. Ability to interpret analysis (**CFD**) results

Education

Doctor of Philosophy in Applied Mechanics ***2011-2018***
CGPA: 8.0/10.0

Indian Institute of Technology Madras – Chennai, India
Thesis: Numerical simulation and design optimization of spiral casing in a Francis turbine
Graduated in October 2018

Master of Technology in Thermal Engineering ***2008-2010***
CGPA: 7.38/10.0

Indian Institute of Technology Madras – Chennai, India
Thesis: Computational investigation of the effect of serrated trailing edges on the flow field of an axial flow fan
Graduated in July 2010

Bachelor of Technology in Mechanical Engineering ***2004-2008***
Aggregate: 71.24%
Jawaharlal Nehru Technological University Hyderabad – Telangana, India

Professional Experience

Organization: *Forbes Marshall - Technology Centre, IIT Madras Research Park*
Title: Engineer – Research & Development

Feb 2017 --- Current

- **Technology & Product Development**
  - Responsibilities include development of high performance moisture separators and design of flue gas flow path in industrial bag filters
  - Other responsibilities that include design of desuperheater, furnace oil preconditioning, development of thermoelectric generators (TEG) for flow meter applications
  - Lead projects by collaborating with IIT Madras and other leading academic and research institutions including mentoring research scholars on steam engineering projects

Journal & Conference Publications

International Journals

1. **N Parameswara Rao**, K Arul Prakash and G Saravana Kumar, Numerical studies on fluid flow characteristics through different configurations of spiral casing, Engineering Applications of Computational Fluid Mechanics. 10 (2016) 297-311.
2. **N Parameswara Rao**, K Arul Prakash and G Saravana Kumar, A surrogate model based method to obtain optimal design in spiral casing of a Francis turbine, International Journal of Mathematical Modelling and Numerical Optimization. 9 (2019) 105-126.

International Conferences

1. **N Parameswara Rao**, K Arul Prakash and G Saravana Kumar, Analysis of total head loss in various configurations of spiral casing: A numerical study, International Mechanical Engineering Congress and Exposition, Phoenix Convention Center, Phoenix, Arizona, USA, 11-17 Nov 2016.
2. **N Parameswara Rao**, K Arul Prakash and G Saravana Kumar, Comparison of spiral casing designs of hydraulic turbine using SUPG finite element method-a numerical study, International Conference on Computer Aided Engineering, IIT Madras, Chennai, 19-21 Dec 2013.
3. **N Parameswara Rao**, K Arul Prakash and G Saravana Kumar, An Assessment of Turbulence Models for Predicting the Fluid Flow in Spiral Casing of a Hydraulic Turbomachine Using SUPG-Finite Element Method, ASME 2013 Gas Turbine India Conference, Bangalore, Karnataka, India, December 5-6, 2013.
4. **N Parameswara Rao**, Prasanth Anand Kumar Lam and K Arul Prakash, Numerical simulation of turbulent flow in spiral casing of a hydraulic turbomachine using SUPG finite element method, 17th International conference on finite elements in flow problems (FEF2013), February 24-27, 2013, San Diego, USA.

Software Skills & Strengths

- SOLID EDGE, ICEM CFD, FLUENT, STAR CCM+, Minitab, MATLAB, Tecplot, MS Office
- Global visiting experience