ABHILASH ANJALY SUKUMARAN NAIR

Mobile: (+65) 96558094 Email: asabhilash@gmail.com Nationality: Indian

EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE **Singapore**

Doctor of Philosophy in Mechanical Engineering *Jan 08 – Jan 12 (Expected)*

- Doctoral Thesis : Multi-scale modelling of damage in polymers and composite materials.
- Supervisor : Dr Joshi Shailendra
- Course work grade(CAP) : 4.83/5

Graduate Certificate in Management of Technology *Jan 11 – May 12*

- Specialized in patent analytics, business strategy and IP management.
- Technology commercialization and new venture development.

GOVERNMENT ENG COLLEGE, UNIVERSITY OF CALICUT **Thrissur, India**

Bachelor of Technology in Mechanical Engineering *Sep 01 –Jul 05*

- Bachelor Thesis : Modification and analysis of dock gates for the dry dock at Cochin Port Trust.
- Graduated with first class securing an aggregate of 72.85 %.
- Ranked third in the class (out of 100).

WORK EXPERIENCE

NATIONAL UNIVERSITY OF SINGAPORE **Singapore**

Research Scholar *Jan 08 – current*

- Extensive research experience in the following areas:
  - Finite element analysis of materials and structures.
  - Damage modelling of composites and polymers.
  - Discrete network and Continuum damage model for polymers (synthetic and bio-polymers).
  - Multi-scale modelling of damage in polymers and composites.
  - Proficiency in FEM code development.
  - Developed and implemented various constitutive and damage models in FEM package ABAQUS.
- Supervised undergraduate students in the final year projects.

Teaching (Part-time) *Aug 10 – Apr 11*

- Graduate assistant (Design project) and lab tutor (Solid mechanics) for undergraduate students.
- Conducted consultation sessions and demonstrated lab experiments.

NUCLEAR POWER CORPORATION OF INDIA LTD **Kudankulam, India**

Scientific Officer- C *Sep 06 – Dec 07*

- Involved in the construction of India's first 4X1000 MW nuclear power plant (Indo-Russian joint venture).
- Led a team for the erection of India's first Polar crane, a crane of capacity 190/350+32 tons.
- Coordinated the planning and execution of activities between Indian and Russian side.
- Solved critical problems arose during the execution phase by ingenious ideas, saving time and money.
- Quality control and inspection of various mechanical structures and weld joints.
- Successfully completed the project ahead of schedule by cooperation among various contractors.

Trainee Scientific Officer *Sep 05 – Sep 06*

- Undergone one year intensive training in nuclear engineering at nuclear training centre, KKNPP.
- In-depth understanding of overall power plant operations and entire nuclear fuel cycle.

APOLLO TYRES LTD **Kerala, India**

Management Trainee *Aug 05 – Sep 05*

- Supervised product flows and job schedules on the shop floor in the tyre building section.
- Managed and motivated floor personnel enhancing the productivity.

LEADERSHIP ROLES AND ACTIVITIES

Resident Assistant, National University of Singapore *Jun 09 – Dec 011*

- Managed events, activities and communications with senior management in the university residences.
- Organized various workshops, fun filled activities and conducted conflict mediation sessions for residents.

Thrissur motor show-04, Government Eng College *May 04 – Sep 04*

- Led a team of six for Thrissur motor show-04 (largest in the province) organized by ME department.
- Negotiated with different companies to display their cars and allotted floor and advertisement space.

Volleyball Team Captain, JNVK (A levels) *Mar 99 – Sep 00*

- Successfully led the team to win bronze medal in a regional sports meet.
- Member of the college volleyball team.

PUBLICATIONS

Journal Papers

- Abhilash, AS., Joshi, SP., Mukherjee, A and Mishnaevsky, L, Jr., "Micromechanics of diffusion induced damage evolution in reinforced polymers", *Composites Science and Technology, 71, 333-34, 2010.*
- Abhilash, AS., Joshi, SP and Prashant K. Purohit., "Characterization and rate dependent behaviour of Bio-polymer networks", *In Preparation.*
- Abhilash, AS and Rethinaraj, T.S. Gopi., "Safety of VVER 1000 reactors at Kudankulam in the context of Fukushima accident", *To be submitted to the Journal of Energy Policy.*

CONFERENCE ORAL PRESENTATIONS

- Abhilash, AS and Joshi, SP., "Micromechanics of diffusion Induced damage evolution in reinforced polymers", *ACE-X 2010 Paris, France (July 08-09, 2010).*
- Abhilash, AS., Joshi, SP and Prashant K. Purohit., "Stochastic Modelling of Discrete Filament Networks Mimicking Polymeric Microstructures", *ICMAT 2011, Singapore (26 June to 1 July, 2011).*
- Abhilash, AS., Joshi, SP and Prashant K. Purohit., "Rate-Dependent Stochastic Response of Discrete Filament Networks", *ISCM-III, CSE II, Taipei, Taiwan (5-7 December 2011).*

Seminar Presented

- Abhilash, AS., "Interface damage modelling in fiber reinforced composites". *Risø National Laboratory for Sustainable Energy, DTU, Denmark, 15 July 2010.*

ACHIEVEMENTS

- NUS research scholarship for graduate studies at National University of Singapore.
- Obtained a GATE score of 93.04 percentile.
- All 'A' Grades in AISSCE (A levels).

PROFESSIONAL SKILLS

Technical : Expert knowledge in computational modelling tools like FEM and CFD.
: Experience in finite element analysis of structures and multi-scale modelling.
: Experience in computational modelling of heat transfer applications.

Programing Languages : FORTRAN, C, C++ and MatLab.

Analysis Packages : ABAQUS, Fluent, AutoCAD, Pro/E.

IP Analytics : Experience in technologies related to energy industry.

- Patent Landscaping, Patentability, Freedom to practice, Invalidation, Infringement and Patent evaluation.
- Performed patent litigation and invalidation studies.
- Analysed IP portfolios for technology tracking and patent activities.
- Experience in using analysis software like Thomson Innovation and Goldfire.

Languages : Excellent spoken and written skills in English and Malayalam, Fair skills in Hindi.

ADDITIONAL INFORMATION

- Student member, American Society of Mechanical Engineers (ASME).
- Developed MatLab based pre-processor software for FEM commercial package ABAQUS to generate filaments networks and characterize the topology (for discrete network modelling of random topologies).
- Completed a project in wind energy: Technology evolution and forecast using patents as pointers
- Course in Oil & Gas : Oil and Gas Technology
- Courses in IP management : IP Management , Technology Intelligence & IP Strategy
- **Interests** : Windsurfing • Reading • Traveling • Music • Photography.