

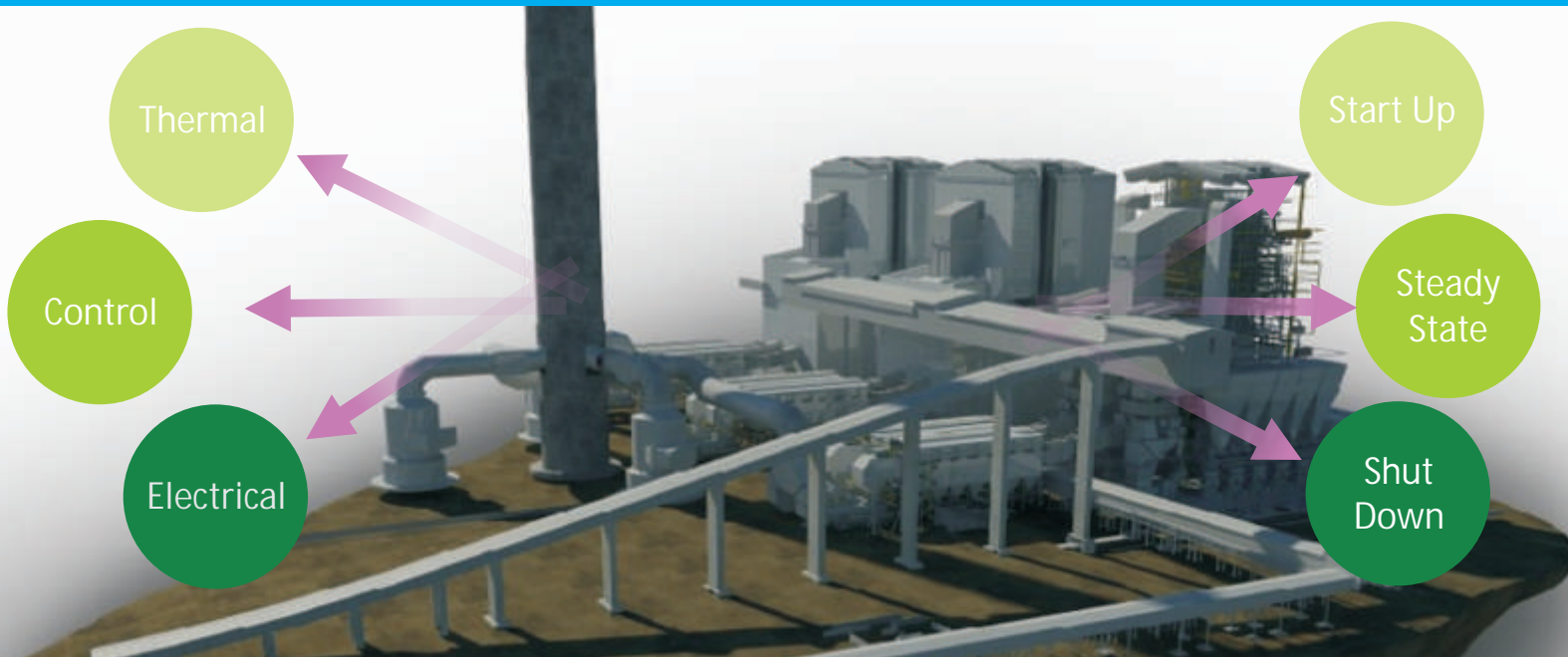
National Seminar on Powerplant Design, Analysis, Optimization & Residual Life Assessment and Extension

Minimize plant downtime, Maximize profitability

11th April 2011 @Mumbai

12th April 2011 @Baroda

18th, 19th & 20th April 2011 @ Bangalore



Organisers



Dear Friends, Colleagues

Energy requirement around the world has triggered the powerplants to aggressively work on designing, operating and maintaining the efficient powerplants in order to

Minimize plant downtime, Maximize profitability

However design and operation of powerplants holds multiple challenges to Engineer & Plant Management some of these challenges seems to be big that they are often accepted when being "Well Enough" or "Functional". This shortfall of optimized state is tolerated mainly due to the expensive time consuming procedures involved in segregated design and preventive maintenance, which inevitably leads to significant financial losses over the long term.

The modeling of a powerplants, however, enables an immense increase in the efficiency of the power generating industry. This accounts for the design right through to decommissioning. Not only does it enable optimization of the complete plant's design, but also realises significant capital and hourly savings by enabling plant investigations in a safe and reproducible virtual environment.

The planed seminar focus to cover wide spectrum of activity in powerplants

- > *Conceptual Design of Powerplants systems, sub-systems, controller, training simulators..etc*
- > *Design, Simulation of Powerplants Systems, sub-systems, controller, training simulators..etc*
- > *Evaluation of Powerplants safety*
- > *Dynamic or Transient Performance Study of Powerplants - in start up, running and shut down condition*
- > *Energy Efficiency Study*
- > *Optimization of Systems, Subsystems*
- > *Simultaneous Flow of Thermal & Fluid Network*
- > *Root Cause Analysis on a system & component level.*
- > *Emission reduction studies.*
- > *Optimize cycle and component efficiencies.*
- > *Analyze control scenarios & simulate operational procedures.*
- > *Upgrades to primary systems, sub systems & auxiliaries testing and evaluated for cost effectiveness*
- > *Finite Element Analysis to evaluate the structural, thermal stress, strain results*
- > *Fatigue Durability Assessment, Creep - Fatigue interaction Material Modeling, 3D Fracture Mechanics Studies*
- > *Residual Life Assessment & Extension*
- > *NDT, Material Testing and Metallurgical Studies*
- ...many more

There will be a open forum discussion with experts from the industry & Academia. Participants can bring their models/queries or they can mail to info@dhio.in or feel free to contact DHIO Team Members for assistance.

Looking forward to see you in the seminar.

With Best Regards
Santhosh N L, Director

Invited Speakers *(alphabetical order)*

Mr. Abrie Venter

Director, samahnzi (Pty) Ltd., South Africa

Dr. G. S. Grewal

Deputy Director & Head, MTD
ERDA, Vadodara, India

Mr. Jean van der Merwe

PM, M-Tech Industrial (Pty) Ltd., South Africa

Nitn S. Gokhale

Director, Finite To Infinite, Pune

Dr. J. S. Rao

Altair Engineering, India

Dr. S. Seetharamu

Additional Director, Group Head -MTD
CPRI, Bangalore India

Dr. G V Rao

Technical Advisor, DHIO R&E Pvt Ltd.,

&

Confirmation Awaited :- Invited Speakers from NTPC, BHEL, NPCIL, IGCAR, BARC & Other leading Power Sectors

11th April 2011	Mumbai	Seminar on Power plant Design, Analysis, Optimization & Residual Life Assessment and Extension
12th April 2011	Baroda	
18th,19th, 20th April 2011	Bangalore	
13th April 2011	Baroda	One Day Seminar on Design, Analysis, Optimization, Fatigue Life Estimation & Extension of Oil & Gas Systems
14th April 2011	Delhi	One Day Seminar on Design, Analysis, Optimization, Fatigue Life Estimation & Extension of Water Systems
Other parallel one day seminar on 20th April 2011 @ Bangalore		
20th April 2011	Bangalore	3D Power Plant Simulator Training

Registration details contact

For Powerplant Seminar

Ms. Uma, uma@dhio.in, +91 9591994640

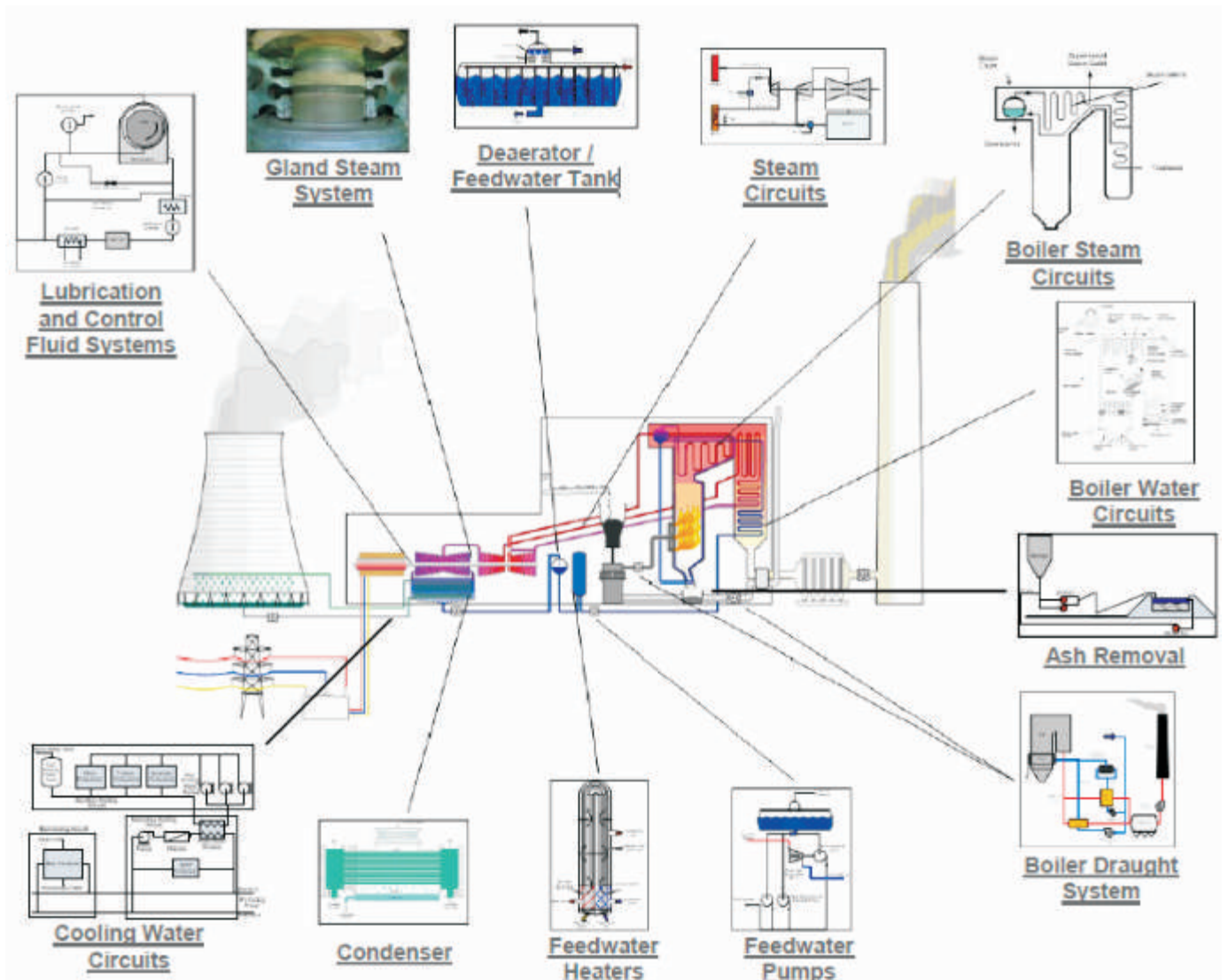
For Oil & Gas, Water Systems

Ms. Sony, sony@dhio.in, +91 9591994643

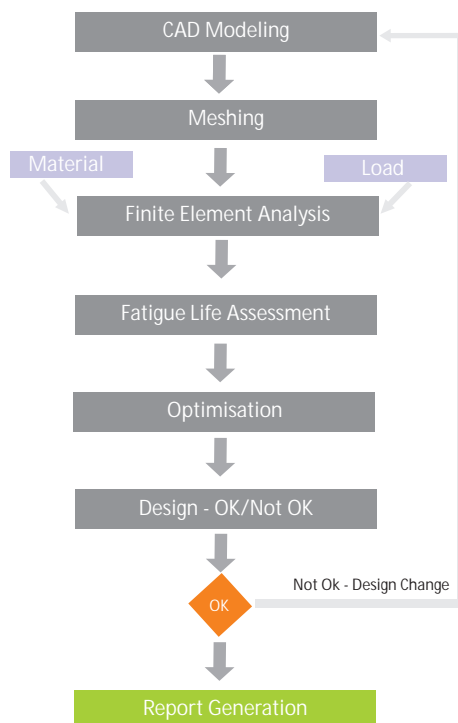
For all clarification, seminar details

Contact : info@dhio.in, +91 9591994642

Powerplant Design, Analysis and Optimisation



Residual Life Assessment & Extension



Step 1 : Reverse Engineering

- Generate 3D CAD Data, Design Drawings

Step 2 : Powerplant Modeling - thermal-fluid network simulation

- Network Level/Process Simulation, to evaluate the performance at designed condition

Step 3 : Material Characterization

- Generate Visco Elastic, Creep Fatigue Data of Nascent material

Step 4: Evaluation of Material Degradation (In Service)

- Evaluate the Loss of Strength, Degradation, Fracture Section, Crack Size..etc

Step 5: Determine the Operational Thermal & Stress Condition

- Apply Finite Element Method
- Structural /Transient Analysis/ NVH/Thermal Analysis/Welding Simulation ...etc

Step 6: Evaluate No. of Cycle to failure, Reliability, Location of Crack Initiation

- Thermo – Mechanical Fatigue Analysis
- Creep – Fatigue interaction
- Weld Fatigue Analysis /Weld Life Assessment

Step 7 : Carry out the 3D Fracture Mechanics Simulation

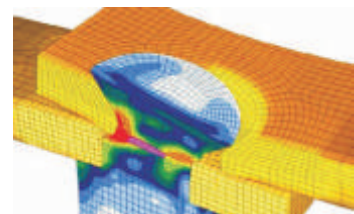
- Find the Crack Propagation and failure, Remaining Life Studies

Step 8 : Powerplant Modeling - thermal-fluid network simulation - in re-engineered condition

- Network Level/Process Simulation, to evaluate the performance of powerplant for modified component or sytems or sub systems in redesigned condition, virtual evaluation of changes before implementation in the actual powerplant.

Step 9: Corrective Means for Life Enhancement

- Evaluate the effectiveness of Life Extension by FEM implement Life Extension Measures



DHIO Research & Engineering Pvt. Ltd.,

DHIO Research & Engineering Pvt Ltd., is an collaborative engineering services and R&D company, providing high end product design, analysis and optimization to companies in India, Europe, US and Japan.

DHIO has a team of experts in Computer aided design, FEA, Computation Fluid Dynamics, Fatigue Durability & Fracture Mechanics, Metallurgy, and Optimization specialists involved in complex engineering simulation to take care of the advanced research aspect in product/process/material design, redesign, engineering, reverse engineering, analysis to save money, material and time.

DHIO Research involved in application of state-of-the art technology and tools in power plant design, analysis, optimization and Residual Life Assessment and Extension activities. DHIO has a team of experts with decades of experience in powerplant performance evaluation, root cause failure analysis and involved in minimizing the power plant downtime and maximizing the profit.

DHIO Partners with Flownex International,SA for FlowNEX Thermal -Fluid Network simulation software & with Samahnzi for 3DPACT - Power plant simulator sales, support and training in India. DHIO partners with Altair India for promotion of FEA, Fatigue and Optimization software in various vertical across India. [For More Details : www.dhio.in](http://www.dhio.in) info@dhio.in +91 9591994642

Flownex International, SA

Flownex - Advanced Powerplant Simulation Software developed by M-Tech Industrial (Pty) Ltd. through the innovation fund, a business unit of the Department of Science and Technology of South Africa and used by major powerplant companies around the world. M-Tech Industrial is an multi-disciplinary engineering company headquartered in Potchefstroom . The company was founded by Dr. Gideon Greyvenstein and Dr. Pieter Rousseau, at the time both professors in mechanical engineering at the Potchefstroom University (now the North-West University).

Areas of specialization

- > Design, analysis and optimization of complex thermal-fluid systems such as coal, gas and nuclear power plants, compressed air networks, water networks, gas networks, heat pumps, refrigeration systems, turbo machinery, heat exchangers, mine cooling systems, HVAC systems, desalination plants and test facilities.
- > Computational fluid dynamics.
- > Development and implementation of energy efficiency projects such as pump scheduling schemes on mines, large scale heat pump water heating systems on buildings.

[For more details : www.flownex.com](http://www.flownex.com)

Samahnzi (Pty) Ltd.

Samahnzi (Pty) Ltd., is developer of 3D/Virtual Plant (3D PACT) Comprehensive Training and Production Support

3D PACT is a revolutionary, interdependent suite of software technologies that effectively integrates:

- Real time 3D rendering software,
- A rich set of functionality that enables comprehensive technical staff training at all types of power plants
- Production planning and support functionality such as planning, practising and testing of isolation, safety, inspection and maintenance procedures

The above provides plant instructors, operators, engineers and maintenance staff with unrivalled abilities and intuitive, easy to use interfaces for training, monitoring, planning and production support purposes.

3D PACT features seamless integration with M-Tech • Industrial's full-scope simulator platform, FSE. Users therefore have the option to either run 3D PACT as a standalone or integrated with a full-scope, high fidelity Training/Engineering Simulator

[For more details : www.samahnzi.co.za](http://www.samahnzi.co.za)

Altair

Altair empowers client innovation and decision-making through technology that optimizes the analysis, management and visualization of business and engineering information. Altair Engineering's HyperWorks is a computer-aided engineering (CAE) simulation software platform that allows businesses to create superior, market-leading products efficiently and cost effectively.,

The challenge in the energy industry is to efficiently and in an environmentally friendly way, to convert energy from one form to another, for example from mechanical energy in the wind to electricity, and distribute it over long distances. CAE simulation and optimization continues to be an outstanding way to study and improve problems in the Energy industry, including:

[Petroleum](#): Structural geology, extraction, and platform design

[Wind](#): Composite blade optimization, modeling of turbine assembly, multi-body dynamics

[Turbine](#): High-fidelity turbine modeling, thermal management, containment

[Nuclear](#): Nuclear reactor safety and process optimization

Altair® HyperWorks® provides a comprehensive suite of CAE tools to solve energy discovery, extraction and utilization problems throughout the energy industry. [for mode details visit www.altair.com](http://www.altair.com)



To,

Book Post



From

Srinath S
Co-ordinator - National Seminar on Powerplant
DHIO Research & Engineering Pvt Ltd.,
No 277, 1st Floor, Above Central Bank, 8th main, 4th Block,
Basaveshwaranagar, Bangalore- 560 079 India
Ph/Fax: +91 080 42151310 Cell: +91 9591994639
Email: srinath@dhio.in web: www.dhio.in

