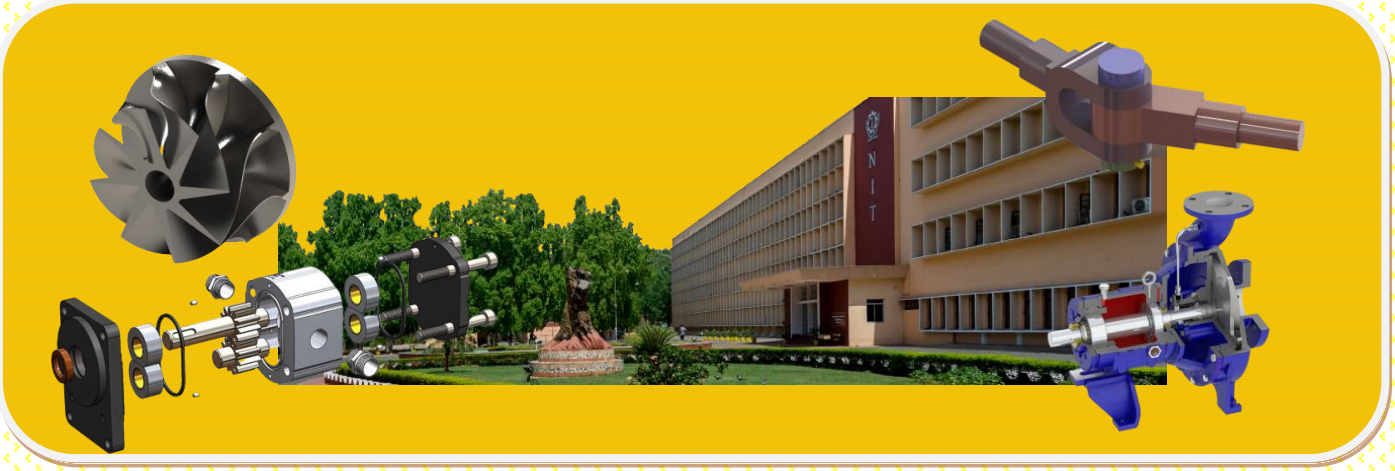
Five Days Workshop
On
Solid Modelling and Motion Studies
For Research and Industrial Applications
(SMMSRIA-2022), 12th-16th December 2022



Organised by

Department of Mechanical Engineering
National Institute of Technology Rourkela, Rourkela 769008 (Odisha)

Coordinator: Prof. Suraj Kumar Behera
Department of Mechanical Engineering, National Institute of Technology, Rourkela, Odisha, India,769008

INTRODUCTION TO THE PROGRAM

At current practice in industries, solid modelling of any equipment, tools or products used in industry is essential in the pre-manufacturing stage. To visualize the designing parameters of any product/tool before manufacturing helps engineers to take an appropriate decision. The interactive and user-friendly solid modelling tool "SolidWorks' is very popular in industries. The 2D fabrication drawings from solid models is another aspect of SolidWorks, which helps to fabricate the designed product. SolidWorks can also be used for space management of existing tools. The motion studies and simulation is an efficient analytical tool that allows the designer to visualize product behavior under various operating conditions. This workshop is designed for the delegates who wish to learn the pre-manufacturing process of any product. This program focuses to provide the skill to create 3D models, assemble them, projection views and motion study using SolidWorks software.

IMPORTANT DATES

Last date for receipt of application: **30th November 2022**
Last day of selection notification: **1st December 2022**
Only **50** number of outstation participants will be selected on the **first-cum-first-serve** basis. Selected candidates will be informed by email. Complete information for communication must be necessarily provided in the registration form.

CONTACT DETAILS

For any clarification, please contact

Prof. Suraj Kumar Behera
Department of Mechanical Engineering
National Institute of Technology, Rourkela
Odisha, India,769008
Tel: +91-661-246-2508 (O), Mob: +91-9040893760
Rourkela 769008 (Odisha)
Email ID: smmsria2022@gmail.com
: beherask@nitrkl.ac.in

ABOUT NIT ROURKELA

The National Institute of Technology, Rourkela was founded as the Regional Engineering College, Rourkela on 15th August 1961. The institute was declared as National Institute of Technology with Deemed to be University status on 26th June 2002 by the MHRD, Government of India. The institute is spread over 262 hectares of the lush green picturesque landscape, against a hilly backdrop, creating a tranquil environment. Rourkela is well connected to all the major cities of India by railway network. Rourkela railway station is approximately 6 km from NIT Campus.

WORKSHOP CONTENTS

The workshop will be carried out for consecutive **five days** with **hand-on training** using **SolidWorks®**. Briefly, the course contents are given below:

Dates	Details of the Workshop
12/12/2022 (Monday)	• **Introduction to Solid Modelling and SolidWorks®:** Basic modelling and its terminology, 2D sketching, Sketch entities rules that govern sketches, Sketch relations, Dimensions, Selection of sketch plane, extrude boss, extrude cut. • Assignment 1: Two exercises and Discussion of assignments.
13/12/2022 (Tuesday)	• **Basic Part Drawing features and Projection views:** Details of the part, Boss feature, sketching on a planar face, cut feature, View selector, Hole wizard, Editing tools, Drawing projection views, Changing parameters and Rebuilding model. • Assignment 2: Three exercises and Discussion of assignments. • Assignment 3: One Exercise for CSWA certification and discussion on the same.
14/12/2022 (Wednesday)	• **Advance features of Part drawing:** Linear and Circular Pattern, Reference Geometry, Mirror Patterns, Case Study: Handwheel, Revolved Features, Building the Rim, Building the Spoke, Edit Material, Mass Properties, File Properties, Shelling, Ribs and Assembly of Machine Components. • Assignment 4: Two Exercises and Discussion on assignment. • Assignments 5: Two Exercises for CSWA certification and discussion on the same.
15/12/2022 (Thursday)	• **Assembly and Sheet drawing:** Drawing Sheets and Sheet Formats, Details and Sections, Broken Views and Sections, Case Study: Universal Joint, Bottom-Up Assembly, Mating Components, Talk by invited Expert and Introduction to Motion Study with example. • Assignment 6: One Exercise and Discussion on assignment. • Assignments 7: One Exercise for CSWP certification and discussion on the same.
16/12/2022 (Friday)	• **Motion Studies and stress analysis:** Motion Manager Interface, Motion Elements, Motor and Force Profiles, General Techniques and Animation, Component Contact, Motion Study Plots, Motion Study Mates, Event-based Motion Analysis, Stress Analysis for Motion. • Assignment 8: One Exercise and Discussion on assignment.

WHO SHOULD ATTEND?

The participation in this workshop is open to faculty and students of recognized engineering college, researchers from the research laboratory, and engineers from industries. This program is also intended for research scholars pursuing PhD at any academic institute/ research laboratory. The successful participants will be given a participation certificate.

ACCOMMODATION

Accommodation can be arranged for outside participants at NIT guesthouses and hostel on a payment basis (Twin sharing) based on availability.

PAYMENT DETAILS

- Students: Rs. 3000/-
- Academic faculties: Rs. 5000/-
- Professionals from Industry & R&D Units: Rs. 9000/-

The workshop fee includes workshop kit, course material, working lunch, and refreshment during the program days. The registration fee has to be paid through Demand Draft in favor of "**CONFERENCE, NIT ROURKELA**" **SBI Account No: 36734418111** (payable at **SBI, NIT Rourkela)**. Demand draft along with filled in application form should be reach by speed post or registered post to Prof. Suraj Kumar Behera, Department of Mechanical Engineering, National Institute of Technology Rourkela, Rourkela-769008 (Odisha) on or before **30th November 2022**. The registration form is given on the last page and available at https://website.nitrkl.ac.in/Academics/Events/Workshops/ for downloading.

REGISTRATION FORM
One Week workshop on
Solid Modelling and Motion Studies
For Research and Industrial Applications (SMMSRIA-2022)
12th-16th December 2022

Name: .....

Designation:.....Department: .....

Organization: .....

Mailing Address: .....

.....

Mobile: .....

Email: .....

Accommodation Required (Yes/No): .....

Payment Details: Amount: Rs ...../-

Demand Draft No.: ..... Date: ...../...../2022

Bank Name and Address: .....
.....

Signature of Applicant Date: ...../...../2022