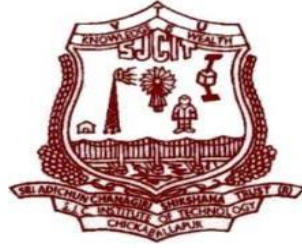


||Jai Sri Gurudev||



S J C Institute of Technology

Department of Aeronautical Engineering



SJCIT

Chickballapur

GUEST LECTURE ON

Overview of Vibration and Control Engineering

Speaker: Mr. Sathyavrath S. N. Senior Verification Engineer of Mechatronics at Mercedes-Benz Research and Development **MRDI**

Date and Time: 7th of May 2022 from 11:00 AM to 1:00 PM.

S J C Institute of Technology
Department of Aeronautical Engineering

CHICKBALLAPUR-562101

During the year: 2021-2022

||JAI SRI GURUDEV||

S. J. C. INSTITUTE OF TECHNOLOGY

Department of Aeronautical Engineering

Guest Lecture Report

SESSION I - “Overview of Vibration and Control Engineering”

A guest lecture on “**Overview of vibration and Control Engineering**” was delivered by **Mr. Sathyavrath.S.N.** Who is a Senior Verification Engineer of Mechatronics at Mercedes-Benz Research and Development **MRDI**, Bangalore on 7th of May 2022 between 11:00 AM to 1:00 PM. The event started with welcome address by Dr. Nagesh D. R. Assistant Professor, Department of Aeronautical Engineering, S J C Institute of technology and brief introduction by Dr. Deepa M. S Head of Department of Aeronautical Engineering, SJC Institute of Technology at ISE Seminar hall.

Lecture on Overview of Vibrational Analysis included the importance of vibrational analysis in Aeronautical industry and related all his experience in the Automobile industry with aeronautical industry. Lecture was started with the purpose for studying Aeronautical Engineering and scope of an Aeronautical Engineer in Automobile Industry. The Aerodynamics of the car and the vibrational part of the car can be easily understood and implemented by Aeronautical Engineers. He then continued by explaining how exactly the industry is distributed into 4 stages, i.e Tier 3 (Raw and semi Raw Materials), Tier 2 (Non-Automotive Grade Parts), Tier1 (Automotive parts and Systems) and then OEM (Original Equipment Manufacturers).

Introduction for the vibrations in Automobile was started with the vibrational parts and components of the Landing gear and how each product is further Classified into Systems and Components which was then followed by the Analogy of Simple model and vibrational parameters using a simple Spring mass damping system which was very briefly explained with the help of a animation video, and a Plot drawn using a basic tool in MATLAB which gave the perfect outputs as per the text book.

Further he also explained the Application of Computation to MBD and how to tackle them all together by doing a vibrational analysis in ANSYS. Further continued by explaining how the testing is been done in real world and compared it with the industrial testing which included all those tests that are done in order to check the vibrational analysis which included DOE-Design of Experiments, Durability testing, Reliability testing, Functional testing and then briefly explained about the functional testing using landing gear as the primary example.

Next the session was further continued with as short Q&A Session and few Questions were popped from the students which were been answered in a very calm and easiest way by Mr. Sathyavrath.S. N. wherein he explained why tools and which tools are important in the industry even though if it is an excel sheet or an software used in simulating automobile parts.

After the short Q&A session sir continued the lecture on Control system where in he covered what is a control system?, Why Control system? And how can I control a System? Gave a brief introduction to all

those sensors which are currently in use in the market like Weight detection, Ride height sensors, tire pressure monitoring sensors and Road profile sensors further he added what are the benefits of control systems and how it is dealt with in the industry and also explained the other practical benefits of the controls in your system. And finally concluded with overview and importance of vibration and control in the today's ongoing industry.

Guest lecture program concluded with the vote of thanks by Dr. Nagesh D, Assistant Professor, Department of Aeronautical Engineering, SJC Institute of Technology.



Figure 1 Attendees for the Guest Lecture



Figure 2 Chief Guests on the stage



Figure 3 Mr. Sathyavrath.S.N. Starting a session on a friendly note.



Figure 4 Mr. Sathyavrath.S.N. Explaining about overview of vibration and control engineering.



Figure 5 Mr. Sathyavrath.S.N. Interacting students about overview of vibration and control engineering

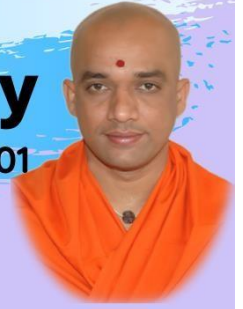


Figure 6 Mr. Sathyavrath.S. N. Concluding the session with a long Q&A session.

//Jai Sri Gurudev//

S J C Institute of Technology

P.B, No. 20, BB Road, Chikkaballapur, Karnataka 562101



DEPARTMENT OF AERONAUTICAL ENGINEERING *Guest Lecture on*



Overview of Vibration and control Engineering



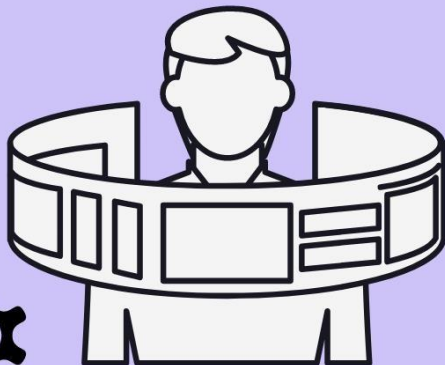
Resource Person

Mr. Sathyavrath S N

Senior Verification Engineer Mechatronics
Mercedes-Benz Research and Development MBRDI

7th May 2022

11: 00 am to 12:30 pm



VENUE

**IS Seminar Hall
IT BLOCK
SJCIT**

Program Chair

**Dr. G.T. RAJU
PRINCIPAL, SJCIT**



Organizing Chair

**Sri. SURESHA J
REGISTRAR, SJCIT**



Convener

**Dr. DEEPA M S
HOD, AE, SJCIT**

Faculty Coordinator

**Dr. NAGESH D
ASSISTANT PROFESSOR
AE, SJCIT**

Student Coordinator

**PRASAD BELGUNDKAR
8th Sem
AE, SJCIT**

Figure 7 Poster of the Guest Lecture