

B.M.S. College of Engineering, Bengaluru -560019 Autonomous Institute, affiliated to VTU

- 1. Name of the lab: B. S. Narayan Centre for Structural Integrity Studies
- 2. Department: Research & Development
- 3. Location of the lab: Block H
- 4. Faculty in charge: **Dr. Anil Chandra A.R.** anilchandraar.mech@bmsce.ac.in
- 5. Associated with industry, if any:
- 6. List of Equipments/facilities along with specifications and photographs + software with versions:



MTS LANDMARK SERVO HYDRAULIC MATERIAL TEST SYSTEM



MTS LANDMARK SERVO HYDRAULIC POWERPACK



MACHINE SPECIFICATIONS



EXTENSOMETER



V SERRATED GRIPS FOR CIRCULAR SPECIMEN (1-19.8 mm dia)



FRACTURE MECHANICS CLEVIS
GRIPS
SOFTWARES:



POWERPACK SPECIFICATION



COD GAUGE



FLAT DIAMOND GRIPS FOR SPECIMENS WITH THCKNESS UPTO 25.4 mm



COMPRESSION PLATEN FIXTURES

- MTS STATION MANAGER v 6.1B 6836
- MTS MULTIPURPOSE ELITE v 4.5.0.344

7. Major Achievements till date:

- The facility has generated an income of ₹ 5,00,080/- by benefiting a total of 75 users, (26 External, 49 internal users) including faculty, research scholars, UG and PG students.
- Consultancy project of 8 Lakh rupees is approved by Dr. Aruna Kumara P.C., Professor, Department of Mechanical Engineering, MSRIT of which ₹ 2,40,000/has been received and proportionate work has been completed.
- BSNCSIS Facility user satisfaction survey was conducted and their valuable feedback were collected and documented for performance assessment
- A Two-day workshop on "Determination of Fatigue Crack growth rate (FCGR) and Fracture Toughness (KIC) of Mild steel and Aluminum alloys", 30-Nov & 1-DEC 2020.
- Fatigue characterization and facility walkthrough during the One-week workshop on "Advanced Manufacturing" organized by the department of Mechanical Engineering, BMSCE, 1-5 MARCH, 2021.
- Laboratory demonstration and hands-on experiment in performing fatigue tests for M.Tech., MSE 1st SEM students 10- APRIL, 2021.
- Training on JIC Fracture toughness by MTS, 27,28- OCT, 2021.
- Training on Digital Image Correlation (DIC) by Josts Engineering, 12 NOV 2021.
- Training on IR Camera by FLIR, 02-FEB 2022.

8. Photographs

- Front view / Overall view of the lab
- Demonstrating the activities inside the lab
- Achievements, receiving awards, workshops, demo of the protyping, etc



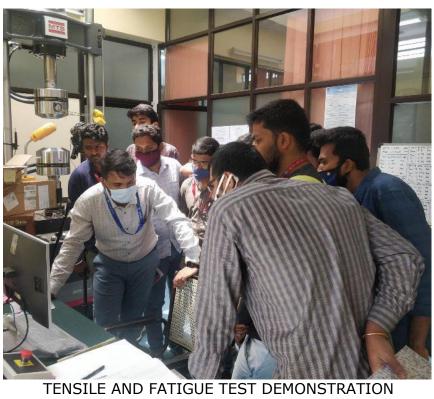
BSNCSIS RESEARCH FACILITY- FRONT VIEW



BSNCSIS RESEARCH FACILITY- OVERALL VIEW



DIGITAL IMAGE CORRELATION- DEMONSTRATION





DEMO ON FATIGUE CHARACTERIZATION USING THERMAL (IR) CAMERA

9. Any other info about the lab:

The B.S. Narayan Centre for Structural Integrity and Studies was established under TEQIP-III Project, March-2020 and is equipped with an MTS Landmark Servo-hydraulic UTM.

MTS LANDMARK SYSTEMS integrate the latest in MTS servo-hydraulic innovation, versatile flextest® controls, proven MTS application software, and a complete selection of accessories to provide highly accurate and repeatable static and dynamic testing across the material testing continuum.

The Test system can be used to perform,

- Quasi-static Tensile & Compression tests
- High Cycle & Low Cycle Fatigue tests
- Fatigue Crack Growth Analysis (FCGR)
- Fracture Toughness Tests KIC & JIC