

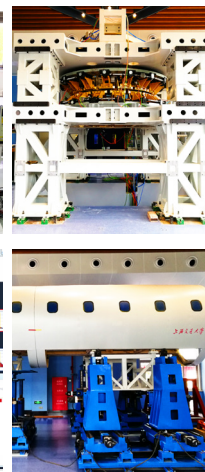
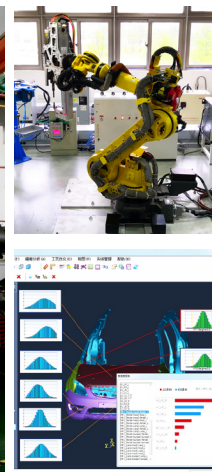
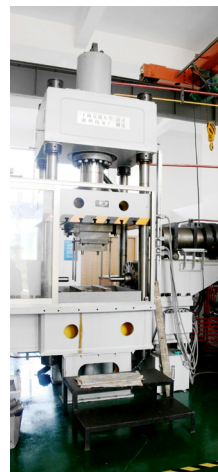


Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures

外总拼线 FO060
Framing Outer Main Line

1. Description

The lab was established in 2004, originating from the Autobody Design and Manufacturing Technology Center co-founded by Academician LIN Zhongqin and Prof. CHEN Guanlong in 1996. The lab is dedicated to applied research on manufacturing processes and quality control of thin-walled structures, e.g. forming, welding, assembly and lightweight design. The lab has made significant contributions to the development of the national manufacturing industry such as automotive, aircraft, heavy-lift launch vehicle and high-speed train. The lab has been highly recognized by both industry and academia and has gained four national-level and nine ministerial-level science and technology progress awards as of today. There are currently 1 academician, 10 professors, 10 associate professors and 2 assistant professors in the key laboratory.



2. Key Research Fields

- Sheet Metal Forming
- Advanced Welding and Joining
- Assembly Quality Control of Thin-walled Structures
- Structure Performance Analysis and Optimization
- Micro/Meso Forming in New Energy Equipment
- Manufacturing Equipment Design for Thin-walled Structures

3. Labs, Centers and Groups

- SJTU-General Motors Collaborative Research Laboratory in Advanced Manufacturing Processes
- SJTU-Baowu Steel Auto Sheet Application Technology Joint Laboratory
- SJTU-SGMW Modern Automotive Body Technology Joint Research Center
- SJTU-COMAC SAMC Civil Aircraft Advanced Manufacturing Technology Center
- SJTU-CRRC Tangshan High-speed Train Body Technology Joint Laboratory

4. Instrumentation & Facilities

- Stamping machine with controllable blank holder force
- Hydroforming machine for pipes
- IPG Fiber laser welding system
- Robotic MFDC WTC aluminium welder
- Fronius TransPuls Synergic 3200 CMT arc welder
- Henrob self-piercing riveting system
- Roll-to-roll UV imprinting machine
- Robotic roll Hemming test machine
- KOMAT'SU servo press
- KEYENCE laser confocal microscopy
- Zwick material testing machine
- GOM digital image correlation for strain measurement
- Shimadzu electro-hydraulic servo-controlled fatigue testing machine
- Proto X-Ray residual stress measurement instrument

5. Website

<http://bmtc.sjtu.edu.cn/en/>

6. Director

Director: Prof. LAI Xinmin
Email: xmlai@sjtu.edu.cn