



Federal University of Santa Catarina

<http://dpqi.proplan.ufsc.br/ufsc-em-numeros/>



46,225 Students
2170 Faculty staff
3174 Technical and administrative staff
116 Undergraduate courses
60 Master programs
55 Doctoral programs

Prof. Edson Bazzo, D.Eng
Department of Mechanical Engineering
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Department of Mechanical Engineering

Created in 1962

67 Full time faculty

24 Laboratories or research groups

2 Undergraduate courses

2 Master programs and

2 Doctoral programs

1507 students

The undergraduate program in **Mechanical Engineering** has a duration of 5 years (4,032 hours) – 55 students/semester.

The undergraduate program in **Materials Engineering** has a duration of 5 years (4,202 hours) – 35 students/semester.



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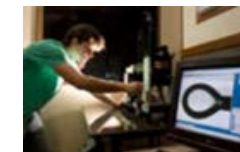
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The undergraduate program in Mechanical Engineering has a duration of 5 years (4,032 hours) – 55 students/semester.

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100% of **undergraduate students** do internship in the industry.

At least 60% of students do research work in laboratories, they take part in competition teams and other extracurricular activities.



Master and Doctoral Degree Program
in Mechanical Engineering

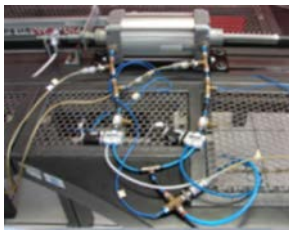
Master Degree level (1969)
Alumni: 1,233 by 2014

Doctoral Degree level (1981)
Alumni: 361 by 2014

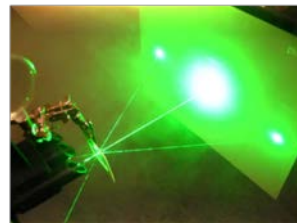
Master and Doctoral Degree Program
in Materials Science and Engineering

Master Degree level (1994)
Alumni: 283 by 2014

Doctoral Degree level (1994)
Alumni: 116 by 2014



Hydraulic and Pneumatic



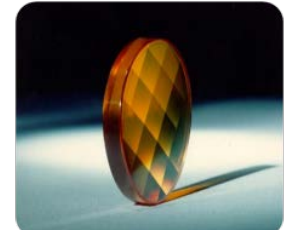
Laser Inspection



Robotics & Welding



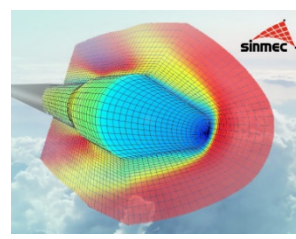
High Precision
Machining



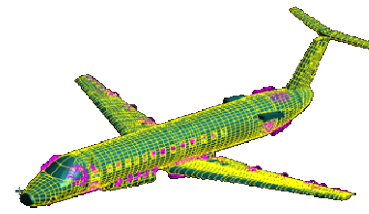
Energy



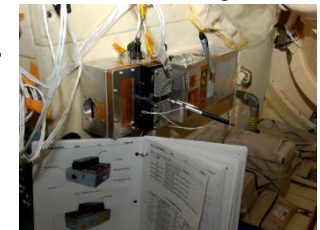
Combustion



CFD



Noise and Vibration



Aerospace
Research

Master and Doctoral Degree Program in Mechanical Engineering

Master Degree level (1969)
Alumni: 1,233 by 2014

Doctoral Degree level (1981)
Alumni: 361 by 2014



Master and Doctoral Degree Program in Materials Science and Engineering

Master Degree level (1994)
Alumni: 283 by 2014

Doctoral Degree level (1994)
Alumni: 116 by 2014



Material Science: Powder metallurgy, plasma processing and Nanotechnology

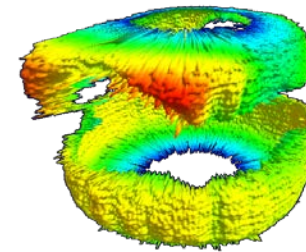
Biomechanics



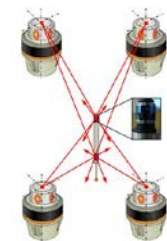
Ceramic Processing



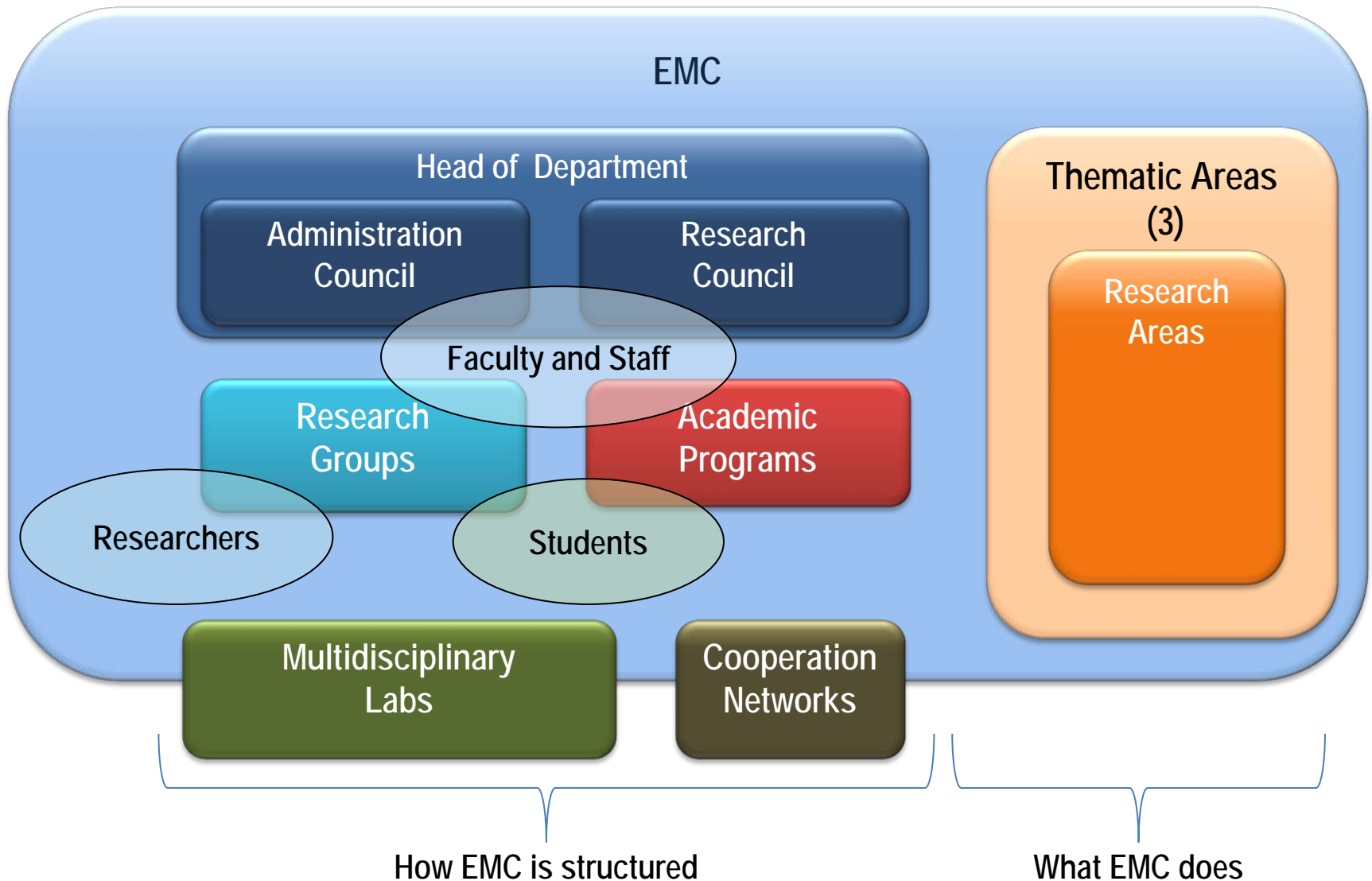
Ceramic and Polymeric Materials



Metrology and Instrumentation



Research Areas and Integration



Laboratory and Research Groups



USICON



VITROCER



People:

Faculty staff: 3

Scientific collaborators: 5

Master and Doctoral students: 11

Undergraduate student: 9

12 Doctoral theses concluded

45 Master's theses concluded

Cooperation:

FLUMES/LIU (Sweden)

DAS/UFSC

NEDIP/EMC/UFSC

Contractors: Reivax, VOLVO, Parker, SAAB, Rexroth Bosch Group and Argos Hytos.

Focus:

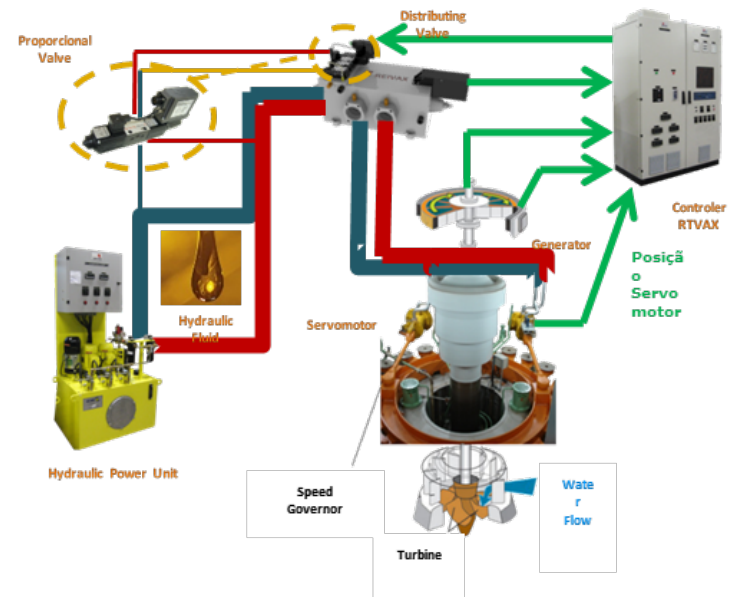
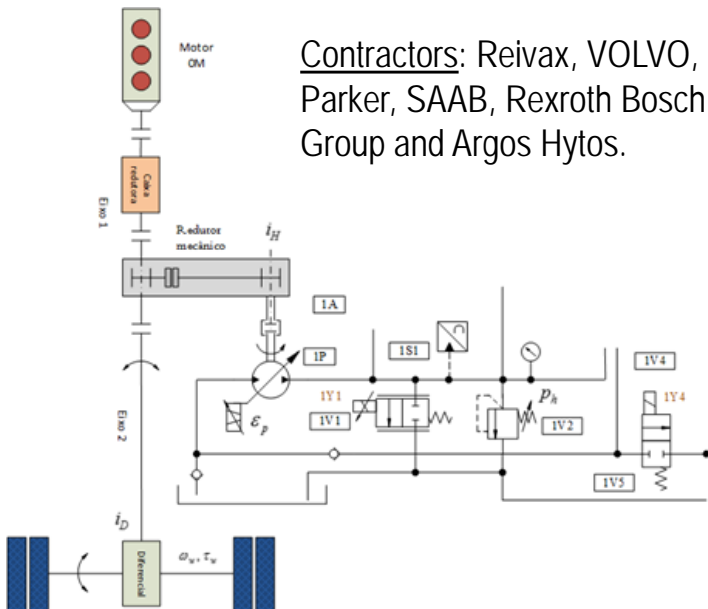
Hydraulics and pneumatics in the automation and control scenario

Research areas:

1. Analysis and design of hydraulic and pneumatic systems and components.
2. Methods for development of mechatronic systems with H&P.
3. Computational systems to support the design of hydraulic systems and components.



Contact:
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People:

Faculty staff: 3

Staff: 1

Research fellow: 2

Master and Doctoral students: 20

Undergraduate student: 15

Cooperation:

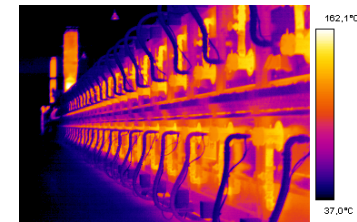
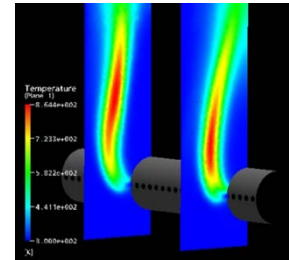
University of Duisburg-Essen - Germany

Instituto Superior Técnico - Portugal

Ireland University - Galway

Research areas:

- Chemical kinetics of combustion
- Combustion systems
- Internal combustion engines
- Power plants
- Energy efficiency
- Two-phase flow systems
- Hydrogen and fuel cells



Contact:

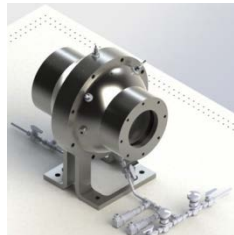
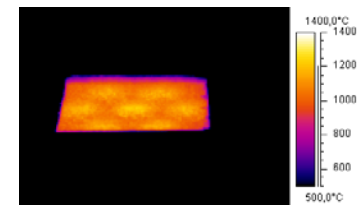
Prof. Amir A. M. Oliveira

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<http://combustao.ufsc.br/professores/amir-oliveira/>

www.labcet.ufsc.br

www.labcet.ufsc.br



Faculty staff: 3

Staff:1

Scientific collaborators: 3

Master and Doctoral students: 15

Undergraduate student: 18

Partnership:

Rwth Aachen University, FMC Technologies, Durum Verschleißschutz GmbH, SPS, IMC Soldagem, COPPE/POLI/CT/UFRJ

Contractors: Petrobras, Tractebel Energia, Embraco, WEG.

Focus:

Welding Processes and Automation, Procedures, Equipment and Instrumentation

Research areas:

- Welding Processes (Arc, LASER, Hybrid)
- Cladding via Welding Processes
- Orbital Welding
- Power sources and Instrumentation design (hardware and software)
- Robotics and Automation (sensors, mechatronics)
- Special Torches and Auxiliary Devices.



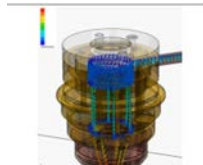
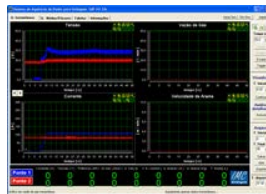
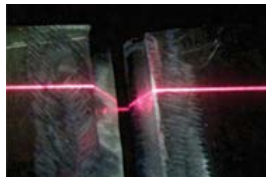
American Welding Society



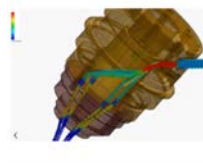
GERMAN WELDING SOCIETY



Associação Brasileira de Soldagem



Canais de Alimentação 1



Canais de Alimentação 3



Contact:

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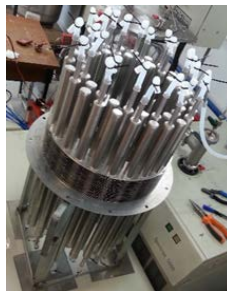
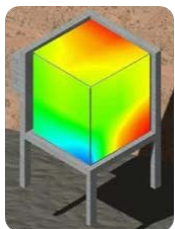
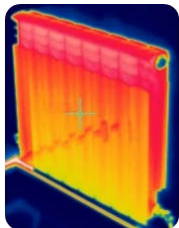
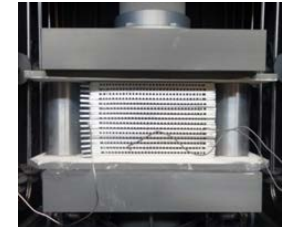
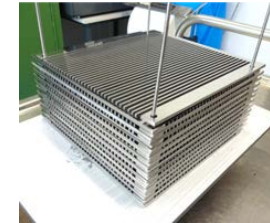


7 Full time professors
1 Mechanical technician
10 Undergraduate students
15 Doctoral and Master students
5 Doctoral theses completed
22 Master's theses completed
8 Patents

Contractors: Petrobras,
Embraer, Cleanergy, Volvo,
Baldo.

Main Research Areas:

- Compact heat exchanger by diffusion welding process.
- Water recovery equipment assisted by thermosyphons and porous media for industrial cooling towers.
- Thermosyphon technology for thermal control of electronics in airplanes.
- Improvement of vehicle radiator cooling systems assisted by thermosyphon technology.
- Oven assisted by heat pipe technologies for cooking and drying seeds or vegetables.
- High temperature heat pipes.
- LHP for satellite thermal control.



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<http://www.lepten.ufsc.br/home/tucal.html>

Faculty staff: 5

Research fellow: 2

Scientific collaborators: 2 (KTH)

Master and Doctoral students: 35

Undergraduate student: 21

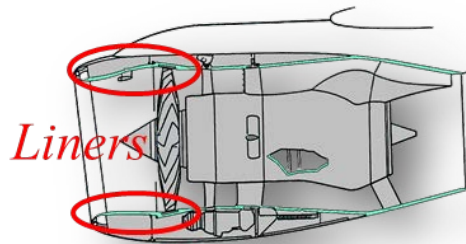
Partnership:

MWL - Marcus Wallenberg Laboratory for Sound and Vibration Research – KTH, Stockholm

Contractors: Embraer, Petrobras, Embraco and others.

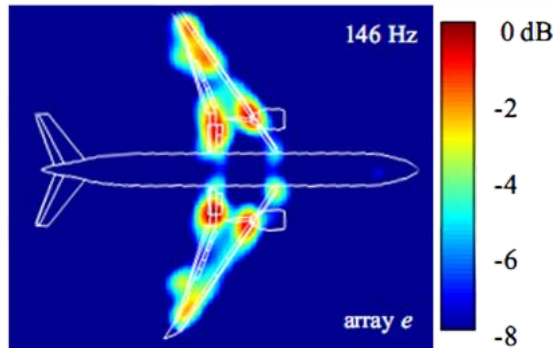
Focus:

Research on topics related to acoustics and vibration with focus on: noise and vibration control on aircrafts, aeroacoustics and numerical methods.



Research areas:

- Numerical methods for aircraft interior noise simulation (FEM, BEM and SEA)
- Silent Aircraft Project - Design and construction of test facilities for liner impedance education and jet noise studies
- Application of beamforming techniques for source localization
- Noise control of air-conditioning and hydraulic systems
- Application of viscoelastic and poroelastic materials for noise and vibration control



Contacts:

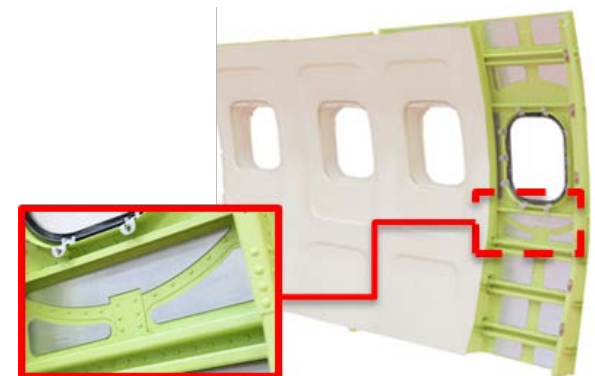
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Thank you for your attention!

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Mechanical Engineering Department

Florianópolis, 16/11/2015