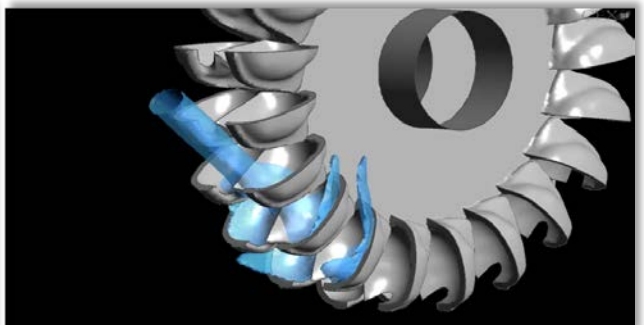
UNIVERSITÀ
DEGLI STUDI
DI PADOVA

DEPARTMENT OF INDUSTRIAL ENGINEERING

Padova - Italy

Mission

The **Department promotes and manages teaching and research**, as well as **technology transfer** in all fields of Industrial Engineering.
An **interdisciplinary approach** and **constant co-operation** with leading foreign Universities and Research Centers grant high international standards in its activities.



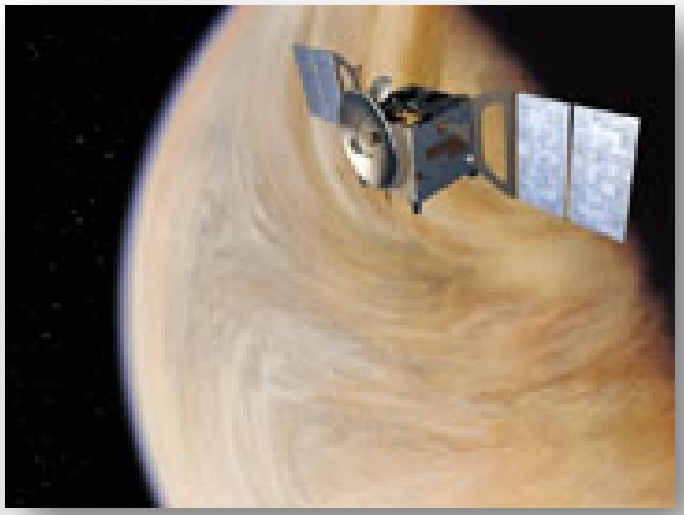
Staff

- over **100** faculty members
- over **100** research assistants and postdoctoral research fellows
- ~**80** administrative & technical staff
- **48** research labs

Teaching

- **4** First cycle programs (bachelor degree)
- **6** Second cycle programs (master degree)
- **1** Doctoral School of Industrial Engineering (participation to 4 external programs)
- **2** Master Courses (lifelong learning)

- ~ **3500** students
- over **120** PhD Students



3-years first cycle programs

1. Aerospace Engineering
2. Chemical and Materials Engineering
3. Energy Engineering
4. Mechanical Engineering

2-years second cycle programs

1. Aerospace Engineering
2. Chemical and Process Engineering
3. Electrical Engineering
4. Energy Engineering
5. Materials Engineering
6. Mechanical Engineering

Doctoral School of Industrial Engineering curricula

1. Energy Engineering
2. Electrical Energy Engineering
3. Chemical and Environmental Engineering
4. Materials Engineering
5. Mechanical Engineering

Master Courses

1. Strategic Environmental Management
2. Project Management and Innovation Management

International Winter and Summer Schools

- ✓ **Winter School in Sports Engineering**

with isea INTERNATIONAL SPORTS ENGINEERING ASSOCIATION

CHEMNITZ UNIVERSITY OF TECHNOLOGY

- ✓ **Summer School in Entrepreneurial Management and Innovation**

Academic Co-operation & Research Agreements with:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Norway, Poland, Portugal, Romania, Russian Federation, Spain, Sweden, Switzerland, U.K.

China, India

Tunisia

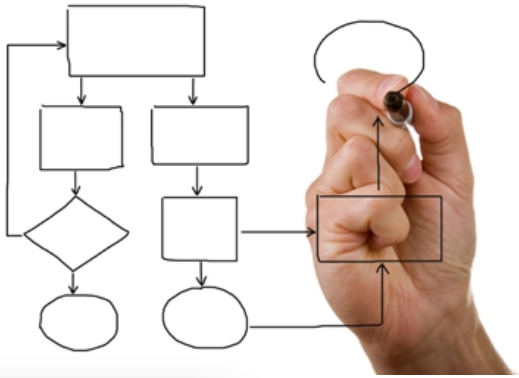
U.S.A., Brazil, Mexico

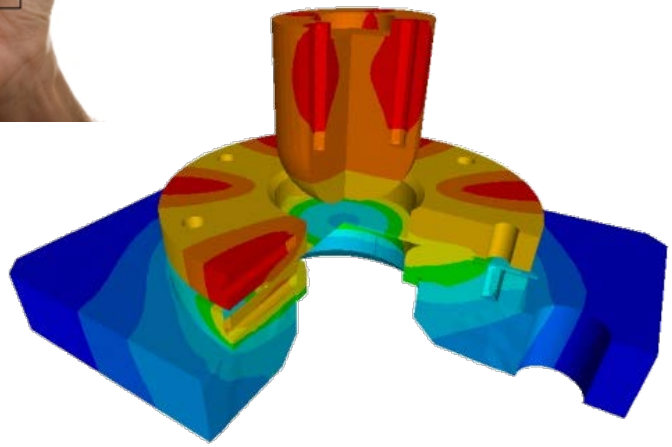
International mobility programs

The University of Padova is member of **T.I.M.E.** (Top Industrial Managers for Europe), a network gathering 55 of the world's leading Technical Universities and Engineering Schools and offering, through a system of voluntary bilateral agreements between its members, promotion and recognition of academic excellence and relevance to the international labor market in the form of Double Degrees in Engineering and related fields

The Department of Industrial Engineering is also participating in "Ciencia sem Fronteiras", the Brazilian Government Study and Research Mobility Program

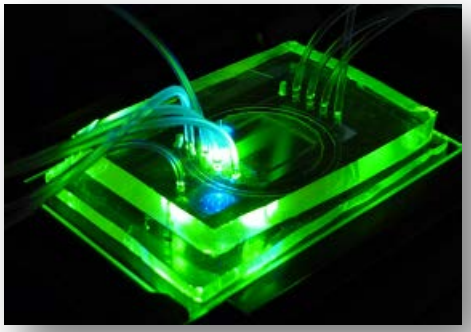
The Department clusters together all the main expertise in industrial engineering promoting innovation through **excellence** and **competitiveness** in research



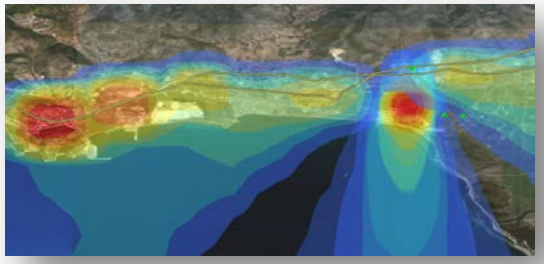


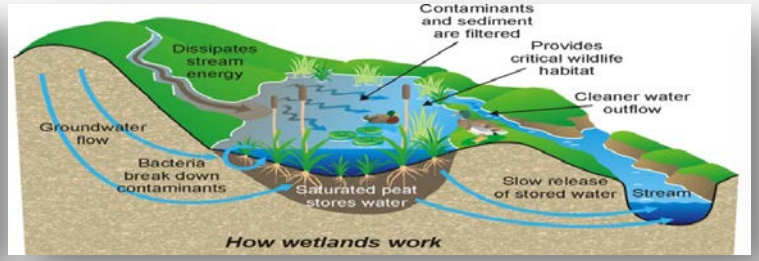
Department of Industrial Engineering

- ✓ Reaction and combustion engineering
- ✓ Food and pharmaceutical engineering
- ✓ Biological and biomedical engineering
- ✓ Safety engineering and risk analysis
- ✓ Biomaterials and biomechanics
- ✓ Product design and quality control
- ✓ Process systems engineering
- ✓ Metallurgy and foundry
- ✓ Process modeling and optimization
- ✓ Micro-manufacture and micro-tooling engineering

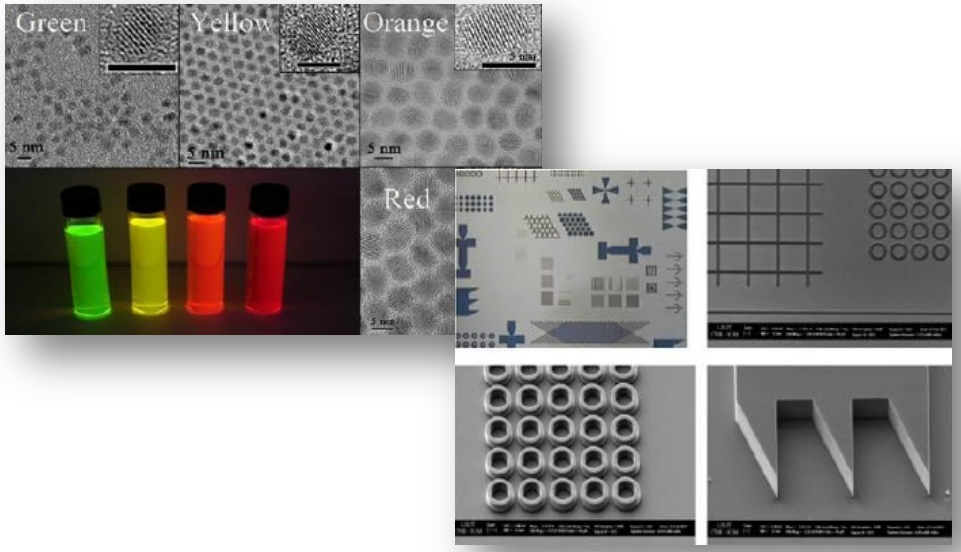


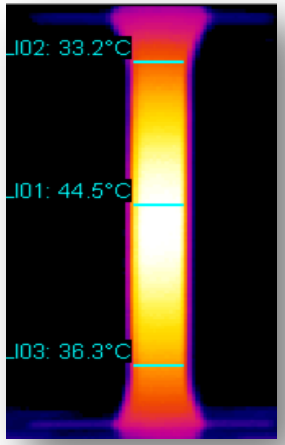
- ✓ **Environmental engineering**
- ✓ **Organometallic synthesis and catalysis**
- ✓ **Platinum based drugs design and synthesis**
- ✓ **Functional materials synthesis and characterization**
- ✓ **Environmental impacts of industrial activity**
- ✓ **Atmospheric pollutant and odor transport**
- ✓ **Eco-compatibility of hydropower plants**
- ✓ **Performance of wetlands and natural pollutant receptors**

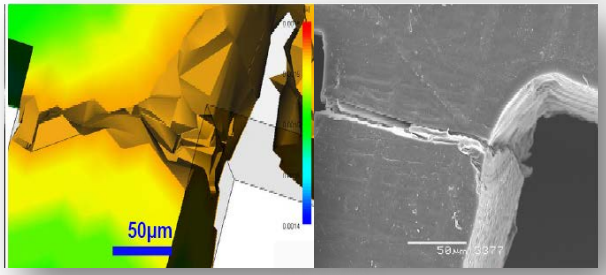




- ✓ **Polymer engineering and processing**
- ✓ **Particle technology**
- ✓ **Nanotechnology for sensors and enhanced material performance**
- ✓ **Surface treatments**
- ✓ **Materials for energy and optical applications**
- ✓ **Glass technology and micro- and nano-lithography**
- ✓ **Ceramic materials**
- ✓ **Mechanical behavior of engineering materials**







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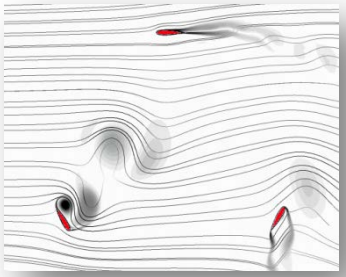
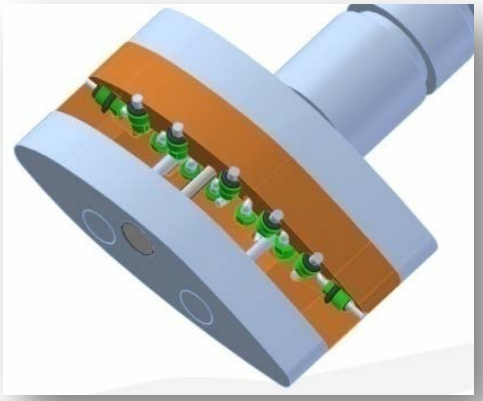
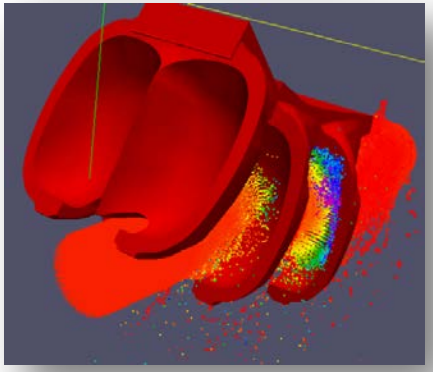
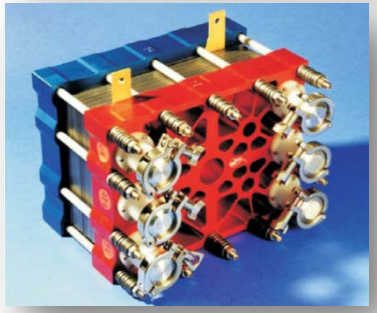
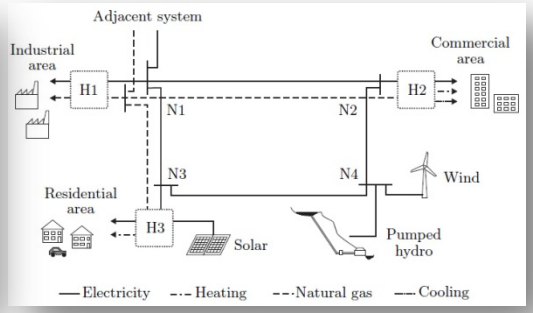






- ✓ **Biofuels and bioenergy**
- ✓ **Renewable energy sources**
- ✓ **Energy and buildings**
- ✓ **Electro-chemical storage**
- ✓ **Applied acoustics**
- ✓ **Turbomachinery design and optimization**
- ✓ **Energy systems design and optimization**
- ✓ **Techno-economical optimization of hydropower plants**
- ✓ **Renewable energy electric-generating systems**





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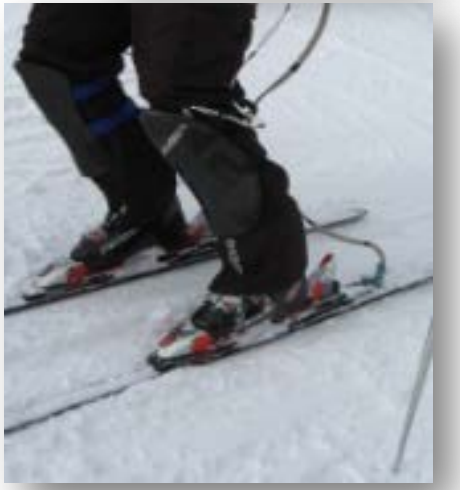
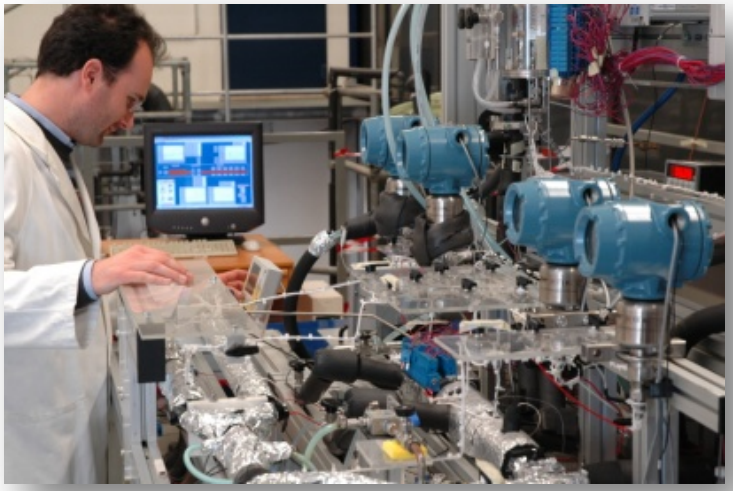
- ✓ **Heating exchangers and cooling systems**
- ✓ **Motorcycle dynamics and design**
- ✓ **Characterization of the motorcycle components**
- ✓ **Electric and hybrid vehicles**
- ✓ **Structural durability assessment**
- ✓ **Fatigue design of components and structures**
- ✓ **Sports engineering**





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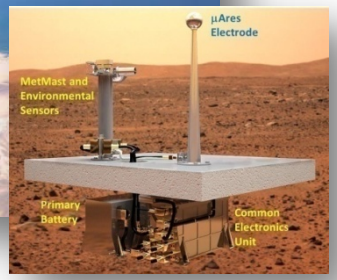
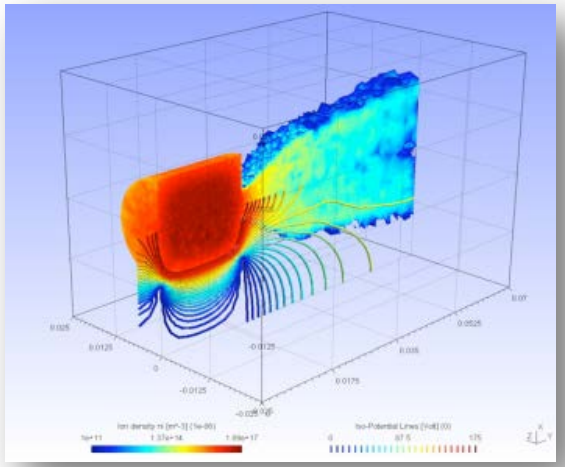
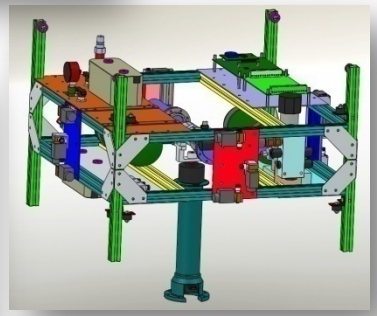
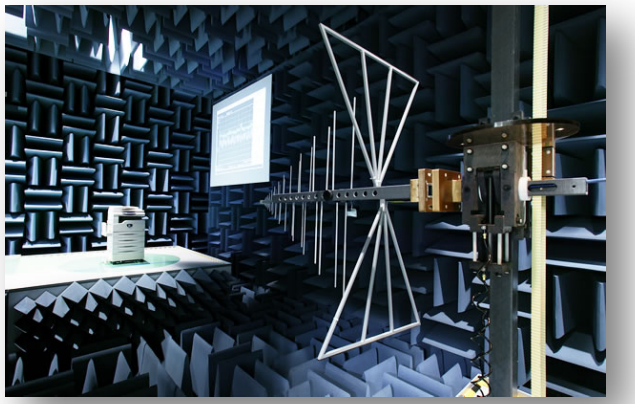
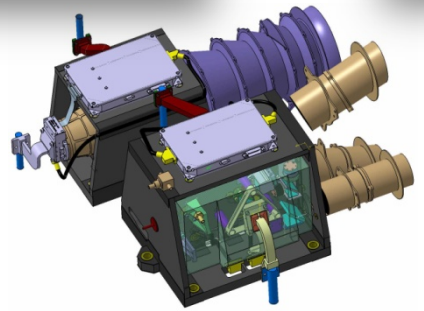


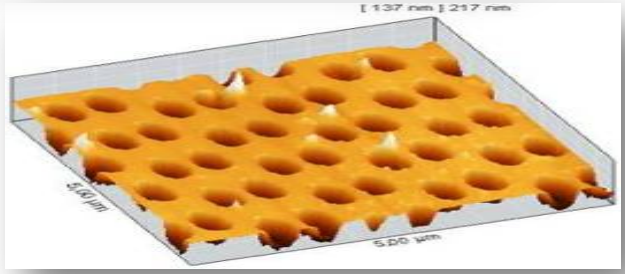
- ✓ **Solar system exploration**
- ✓ **Mission into earth's orbit**
- ✓ **Aerospace plant and systems**
- ✓ **Aerospace propulsion**
- ✓ **Industrial and geometrical metrology**
- ✓ **Measurements-testing on electrical machines**
- ✓ **Industrial electromagnetic compatibility (EMC)**











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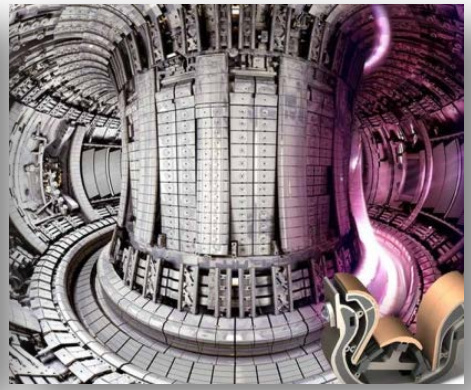
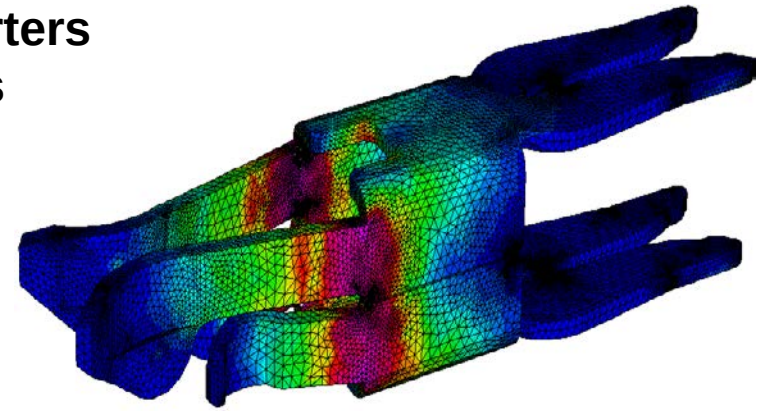



- ✓ **High voltage technology (innovative transmission lines, energy storage)**
- ✓ **Computational electromagnetics and multiphysics simulations**
- ✓ **Appliances of electroheat**
- ✓ **Electric machines, drives and automation systems**
- ✓ **Smart grids - Grid connected power converters**
- ✓ **Photometry and electric lighting techniques**
- ✓ **Plasma physics and technology**
- ✓ **Engineering management**
- ✓ **Entrepreneurship and innovation**
- ✓ **Performance management**



Research Competitions

Race UP

The University of Padova has got its own team in the Formula SAE, a student car design and racing competition organized by SAE International

R3 Project

The University of Padova Project R3 team takes part in the “Mille e Una Vela per l'Università" (One Thousand and One Sailing Boats for University) race cup

Formula Electric & Hybrid Italy

The Laboratory of Electric Systems for Automation and Automotive has taken part in “Formula Electric & Hybrid Italy”, an electric and hybrid vehicle competition

Technology transfer

The Department promotes the results of its applied research and their application in innovative entrepreneurial environments:

- Patents
- Spin-offs
- Participation in **Start Cup Veneto**, a business plan competition aimed to support economic local development
- Participation in **Start Cube**, the University's business incubator
- Collaborations with Science and Technology Parks

Spin-offs

- **Dynamotion** - innovative projects in mechanics and mechatronics
- **Galileia** - services for new energies
- **HIT09** - advanced solutions for aerospace applications
- **Inova** - simulation tools for electromagnetic analysis
- **NanoWebFun** - nano solutions for innovation
- **Unifront** - demilitarization processes and plants

DYNAMOTION

Galileia
SERVICES FOR NEW ENERGIES

hit09

INOVA
Electrical Engineering for
INNOVATION

NANOWEBFUN
SPIN-OFF DELL'UNIVERSITA' DI PADOVA S.R.L.

UNIFRONT SRL

Funding fact sheet
(2013)

Funding from private entities (60 contracts)	⇨	~2.6 M€
External (e.g. EU) research and teaching funding	⇨	~3.2 M€
Funding from UniPD and the Italian Ministry for Education, university and research	⇨	~4.5 M€
Other contributions	⇨	~ 1.0 M€
Total		**~11.2 M€**

23%

29%

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