ENERGY

TECHNOLOGICAL SOLUTIONS FOR ENERGY TRANSITION

ipt INSTITUTO DE PESQUISAS TECNOLÓGICAS

Integrated Solutions for the Challenges of the Energy Transition

For over 50 years, IPT has been a benchmark in energy in Brazil, conducting research, development, and innovation in renewable energies, decarbonization, and advanced fuels.

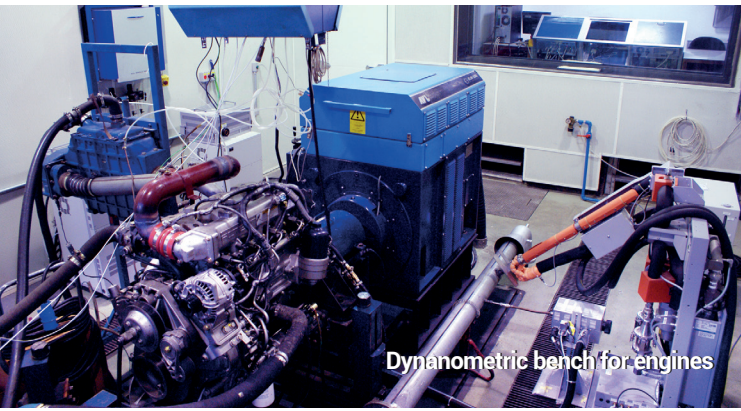
With a highly qualified team and state-of-the-art laboratory infrastructure, the Institute supports companies and governments in the energy transition in strategic sectors such as automotive, agribusiness, mining and metallurgy, transportation, oil and gas, and machinery and equipment.

Thermochemical Engineering Area

Bioenergy and Energy Efficiency Laboratory (LBE)

LBE develops innovative solutions in fuels, efficient generation and use of fuels and biofuels, emissions control, and biomass and agro-industrial waste management.

Accredited by Cgcre/INMETRO (ABNT NBR ISO/IEC 17025) and certified by CETESB for engine homologation under PROCONVE (MAR-I and P-7), the laboratory ensures quality and credibility in testing and certifications.



Dynanometric bench for engines

Fuel testing

It operates in the industrial sector supporting companies in the energy transition, seeking to replace fossil fuels with renewable fuels.

Areas of Expertise

- Liquid fuels and automotive biofuels.
- Engines and vehicle performance.
- Fleet and equipment lifespan.
- Biomass and solid biofuels.
- Thermochemical engineering.
- Industrial combustion.
- Waste to energy.
- Thermochemical routes for advanced fuels (biomethane, H_2, SAF).

Energy Infrastructure Laboratory (LInE)

LInE develops applied research, technological services, tests, and computational simulations, focusing on structural analysis and mechanical systems. It supports companies and public agencies in the oil and gas, sugar and ethanol, renewable energy, and energy transmission sectors.

It also supports the mobility sector in the naval, railway, and automotive areas.

Areas of expertise

- Operational safety.
- Structural integrity.
- Hydrodynamic assessments.

Offshore mooring tests

Laboratory for End-Use and Energy Management (LGE)

The LGE supports the development and certification of projects and products, serving companies in the electrical and electronic and lighting sectors.

It also supports the healthcare sector in the areas of electromedical and dental equipment.

Areas of expertise

- Improvement of electrical and electronic equipment.
- Analysis of signals and controls of complex systems (subway, light rail, umbilical cables).
- Simulations in ultrasound, electrical circuits, and electromagnetic fields.
- Photometry of luminaires and light sources.
- Evaluation of grounding systems.

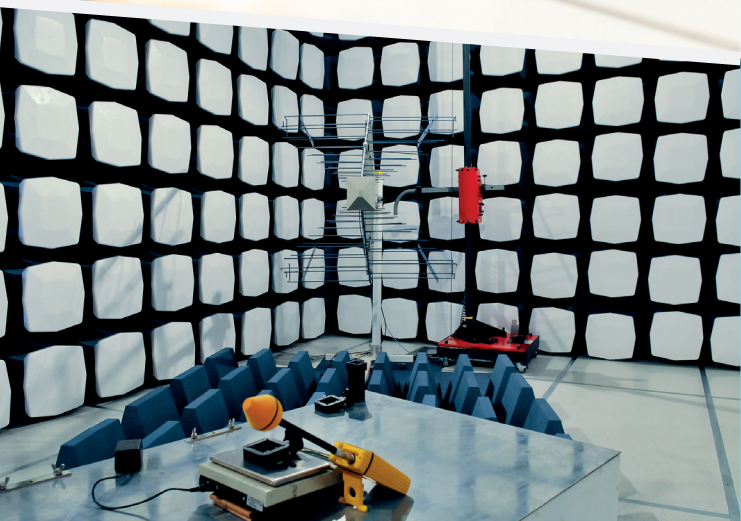
Hydrogen Laboratory (LabH_2)

IPT is implementing one of the most advanced hydrogen R&D environments in Brazil, accelerating the energy transition and the development of clean technologies.

Areas of expertise

- Semi-industrial scale prototypes.
- Solutions for the production, storage, transport, and consumption of H_2.
- Fostering innovation in partnership with companies and universities.
- Reducing the costs of hydrogen-based solutions.
- Promoting international cooperation.


GASOLI
ADITIVA
GASOLI
PREM



CENF

Science Center for Development of Future Energies (CCD-CENF)

CENF conducts research on low-carbon hydrogen, uniting scientific innovation and industrial demands to support the decarbonization of strategic sectors of the economy.

Research Platforms

- H_2 Production: electrolysis, catalytic reforming, and biotechnological routes, focusing on efficiency, costs, and durability.
- Storage and Transportation: materials and systems for greater safety and efficiency.
- Uses and Applications: fuel cells, peripheral components, evaluating wear, lubrication, and safety.
- Regulation and Sustainability: environmental impact, standards, and safe integration of H_2 into the energy matrix.

CENF

Point your phone's camera at the QR code below to access the website:

IPT
Instituto de Pesquisas Tecnológicas

Av. Prof. Almeida Prado, 532
Butantã - São Paulo - SP
05508-901

More information:
T. **+55 11 3767.4730**
energia@ipt.br
www.ipt.br

ipt INSTITUTO DE PESQUISAS TECNOLÓGICAS