



**PSA PEUGEOT CITROËN**

*Press release*



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**PSA Peugeot Citroën and Five Academic Partners  
Create the Vibro-Acoustic-Tribology@Lyon Competency Centre**

**In partnership with the French National Centre for Scientific Research (CNRS), the Ecole Centrale de Lyon (ECL), the École Nationale des Travaux Publics de l'État (ENTPE), the Institut National des Sciences Appliquées (INSA) in Lyon and Université Claude Bernard Lyon 1 (UCBL), PSA Peugeot Citroën is officially inaugurating the Vibro-Acoustic-Tribology@Lyon (VAT@Lyon) OpenLab.**

The ceremony will be held today, as part of the first meeting of the OpenLab's steering committee. It will officially recognize the turning point reached in 2012, with the creation of the OpenLabs network, in the partnership relations forged between PSA Peugeot Citroën and the leading Lyon-based scientific research laboratories working in the areas of acoustics, vibration and tribology (the science of friction, wear and lubrication).

Guided by a scientific research programme defined collectively by these well-known Rhône-Alpes-based laboratories and by the PSA Peugeot Citroën Research and Advanced Engineering Department (DRIA), VAT@Lyon brings together the capabilities of researchers from the following laboratories: Mécanique des fluides et d'Acoustique (LMFA, a joint ECL/CNRS/LYON1/INSA Lyon/UJM unit), Tribologie et Dynamique des Systèmes (LTDS, a joint ECL/CNRS/ENISE unit), Génie Civil et Bâtiment (LGCB, a ENTPE unit), Mécanique des Contacts et des Structures (LAMCOS, a joint INSA/CNRS unit) and Vibrations et Acoustique (LVA, an INSA Lyon unit). Institut Carnot Ingénierie@Lyon (I@L) is also a member of the OpenLab.

In particular, this geographically targeted and topic-specific partnership is designed to expand PSA Peugeot Citroën's capabilities for innovation and proficiency in automotive technologies over the medium to long term, and to enable the laboratories to capture the value of their research by transforming their findings into industrial applications.

The VAT@Lyon OpenLab's scientific programme is structured around nine research and innovation topics, which are being explored across the different research teams. Together, they cover the very wide range of applications that could potentially be developed through the organisation's scientific disciplines.

Key application objectives include:

- Reducing energy loss due to engine friction.
- Reducing vibrations with innovatively engineered wave traps.
- Managing and controlling the vibroacoustics of rotating components, such as engines, gearboxes and gear transmissions.
- Physically modelling complex automotive systems, displaying, for example, chaotic behaviour.
- Optimising the design of radically new vehicle shapes, including sensory issues dealing with motorists' auditory perceptions and aerodynamic noise.

#### **About OpenLabs**

OpenLabs are structures that pool PSA Peugeot Citroën's research teams and testing resources with those of partner laboratories in joint research facilities.

#### **About strengthening partnerships through the Stellab network**

To respond more effectively to the societal, environmental and economic challenges posed by the "vehicle of the future," PSA Peugeot Citroën initiated a strategy in 2010 to enhance its scientific partnerships with the most advanced public laboratories in Europe, Asia and South America. As part of this process, the Stellab OpenLabs network was created to pool PSA Peugeot Citroën's research teams and testing resources with those of partner laboratories in joint research facilities. The VAT@Lyon OpenLab is part of this organisation, along with nine other OpenLabs and ten or so endowed chairs set up in France, the United States, Brazil, China and Switzerland (EPFL).

#### **About the signatories**

##### **CNRS**

*A public organization under the responsibility of the Ministry of Higher Education and Research, the National Center for Scientific Research (CNRS) is France's leading pluridisciplinary research institution. With nearly 34,000 researchers, engineers and technicians, a 2013 budget of €3,415 million and a nationwide network of facilities, the CNRS pursues its activities through more than 1,100 research and service units. It conducts research across every scientific, technological and humanities discipline through ten institutes. The CNRS focuses on developing interdisciplinary research programmes and collaborative ventures among specialists from different disciplines, particularly with academic partners, in order to open new fields of investigation capable of meeting the needs of today's economy and society.*

##### **Ecole Centrale de Lyon**

*Founded in 1857 to address the needs of France's fast-growing industry, Ecole Centrale de Lyon annually awards degrees to nearly 400 engineering students and 70 doctoral candidates (in the 2010/2011 academic year, there were 220 PhD students at the school). Course content benefits from the outstanding research carried out at the six CNRS-certified laboratories on its campus and from the input from its participation in the Unité Mixte Internationale in Canada and four affiliated laboratories in South Korea, Japan, China and Brazil. Reflecting the open-mindedness common to all of France's prestigious "école centrale" engineering schools, Centrale Lyon delivers very high level general engineering instruction that has earned it recognition both nationally and internationally by a number of leading companies as well as fellow universities, with which it has signed agreements for dual degree programmes.*

##### **ENTPE**

*Under the supervision of the Ministry of Ecology, Sustainable Development and Energy, ENTPE trains outstanding engineers in every aspect of sustainable town and country planning, including transport, urban planning policies, the environment, construction and civil engineering. It conducts research in these areas and facilitates the sharing of knowledge. The school comprises five laboratories that cover the full range of disciplines in the engineering sciences, social sciences and environmental sciences, in close collaboration with the academic and business communities. It deploys these capabilities in support of the French economy, society and public policy.*

*One of the five ENTPE laboratories, the Laboratoire Génie Civil et Bâtiment is part of LTDS UMR 5513 CNRS, in its geo-materials, civil engineering and systems dynamics sections. In particular, it conducts widely acclaimed research in the areas of linear and non-linear dynamics (applied to materials, vibroacoustics, structural dynamics, vehicles and transport systems) and physical and perceptive acoustic analysis.*

**INSA Lyon**

Located on the LyonTech - La Doua campus in Villeurbanne, in the heart of the European Higher Education Area, INSA Lyon is ranked among France's top engineering schools. Its five-year, pluridisciplinary, international curriculum trains humanities based, multi-skilled engineers who are both innovative and entrepreneurial. INSA Lyon applies a policy of excellence at every level and also delivers around 140 doctoral degrees per year.

The first INSA to be created in 1957, with a strong commitment to social awareness, the school graduates more than 900 engineers a year in 12 fields of specialisation. It is also an internationally recognised centre of research, with 500 researchers working in 21 laboratories.

**Université Claude Bernard Lyon 1**

Created in 1970, Université Claude Bernard Lyon 1, with 40,000 students, has grown into one of France's leading universities, in terms of both number of students and the quality of its research. With 80% of its degree tracks intended for non-academic jobs in the fields of science, technology and healthcare, as well as the humanities with the integration of IUFM, Université Lyon 1 has demonstrated its commitment to educating young people who can immediately enter the workforce. With its 5,000 employees based in 14 facilities, the University is also one of the leading public-sector employees in the Rhône-Alpes region.

**About PSA Peugeot Citroën**

With its two globally renowned brands, Peugeot and Citroën, PSA Peugeot Citroën sold more than 2.9 million vehicles worldwide in 2012, of which 38% outside Europe. The second largest carmaker in Europe, PSA Peugeot Citroën recorded sales and revenue of €55.4 billion in 2012. The Group is the European leader in terms of CO<sub>2</sub> emissions, with an average of 122.5 grams of CO<sub>2</sub>/km in 2012. PSA Peugeot Citroën has sales operations in 160 countries. It is also involved in financing activities (Banque PSA Finance) and automotive equipment (Faurecia). For more information, please visit <http://www.psa-peugeot-citroen.com>

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