

## French-SME Teqoya captures both the markets and Environmental Guardians with a highly efficient domestically manufactured air purifier.

*Using the Carnot ESP existing competencies in the fields of motorisation and macro-/nano-particle release, Teqoya can help ensure the device is economically and environmentally efficient.*

### Supporting Innovation

Apartments as well as confined spaces, like car interiors, channel a considerable amount of fine and extra-fine particle emissions from combustion of motor or heating systems.

For the general public, emissions control solutions through ionisation often have that disadvantage of being noisy, require frequent routine maintenance of non-recyclable filters and are likely to be ineffective.

Thanks to Carnot ESP's test run capabilities and independent measures, Teqoya has been able to successfully provide a device with a 10-year guarantee in continuous use. Eliminating the needs of consumables, the energy-saving and quiet device boasts unrivalled performances.



### The client needs

Teqoya's venture initiated in 2015 is the result of ongoing research started 15 years ago on the production of negatively charged ions. Purpose was to eliminate the potential risk of ozone-generating effects, such as chest tightness especially.

The SME relies on a production unit of about 10 people based in the Bordeaux region. The small business is seriously engaged in environmental compliance, greater comfort and ease of use, as well as in the elimination of consumables.

The local Chinese market has been the intended and immediate objective of Teqoya's focus. More mature than the French market, China is facing persisting problems associated with the introduction of unreliable consumer devices. To guarantee quality of the clean, sanitised air through its proprietary process, Teqoya has retained the Carnot ESP-linked CERTAM\* unit. It is the only organisation that possesses the necessary expertise and adequate resources required to analyse and quantify the effects of the device positioned nearest to the end-user in a 15m<sup>2</sup> (161ft<sup>2</sup>) room.

The results obtained by Teqoya enabled the SME to get noticed at CES\*\* 2015 in Las Vegas, in addition to New York and China. Mixing robustness and the "Made in France" luxury label the device proven efficacy has already won an appreciable share of the Chinese market, which accounts for 80% of the SME's 2016 revenue.

\* a centre of technological transfer located in Normandy providing engine test benches, air quality and pollutant emissions characterisation

\*\* a global consumer electronics and consumer technology tradeshow

### Partnership

Certam is a major part of the ESP Carnot Institute. Two pivotal elements formed the R&D partnership: first, the impact of Teqoya's system on the extra-fine and fine particle distribution in confined spaces, second, utmost safety for the user even if he/she finds him/herself in the nearest vicinity of the device.

Certam has conducted a simulation close to reality. Its mastering of the combustion and spray modelling fundamentals enables Certam to design an environment where particles of various sizes range between 20 and 1000 nm.

Checks carried out in a 20 m<sup>2</sup> (215 ft<sup>2</sup>) - room performed on a device designed for treating a 15 m<sup>2</sup> (161 ft<sup>2</sup>) area indicate a good air quality status within the first hour of use.

To determine the absence of air oxidation with such element such as ozone, Certam relied on electron paramagnetic resonance (EPR) analyses thanks to spin probes. This fully mastered technique is broadly consistent with other less effective tests performed by Teqoya and supports the indisputable safety of the device.

Teqoya is currently serving the interests of the French consumers who are fully informed about such pollution-related risks, via relevant websites such as Boulanger\* or Celyatis\*\*. Teqoya's product range encompasses devices that can be used in 15 m<sup>2</sup> (161 ft<sup>2</sup>) to 30 m<sup>2</sup> (323 ft<sup>2</sup>) rooms, as well as elements for car interiors.

\* French store chain specialised in leisure, multimedia and household appliances

\*\* French store chain specialised in health, welfare and autonomy