

At first glance, can you tell which ones are the ripe grapes?



We are working to a technological device that would enable all of you to say yes to this and other similar questions. Thanks to a new technology we are developing, a hyperspectral THz camera, it will be possible to take pictures like to one above, with added spectral information such as the water or the sugar content, and thus the degree of maturation.

Measuring the status of a crop remotely is already possible, with satellites and IR cameras that measure the field temperature, but the spatial resolution is too poor to address individual fruits, and the spectral information is not detailed enough to separate different components such as sugar and water content.

THz is a region of the electromagnetic spectrum that has been neglected for a long time, since sources and detectors were not available. But it offers high sensitivity to several important components of everyday life, while it can pass easily through other materials, such as plastic, dry wood and fabric. Our project, h-cube, is developing low consumption and portable THz sensor arrays that could provide high resolution images with material specific spectral information. Flying with our sensor across a vineyard, we will know which ones are the ripe grapes, and tell a smart machine to automatically harvesting at the right place and at the right time, thus saving resources and enhancing quality.

Do you like challenges? Do you know how to draw up a business plan? Do you want to collaborate on a project with a high technological and innovative impact?

We need a creative strategy to bring our idea to market.

And, why not, explore different markets.

## what we expect from you?

- Designed thinking
- Business model devolping for our product

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