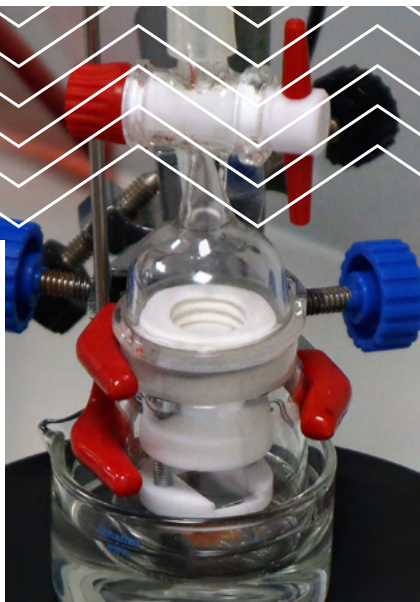


Device for vacuum sublimation



ORGANIC ELECTRONICS

Contact

Alfonso del Rey

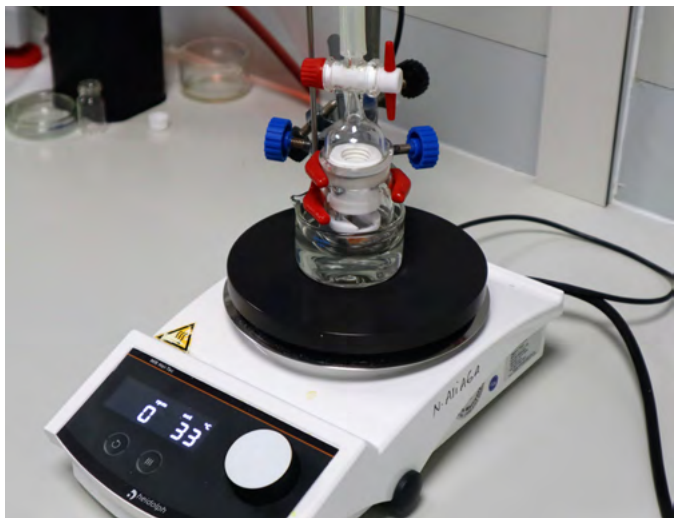
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We present a new device for vacuum sublimation. The sublimator allows the deposition of materials directly onto the desired substrate without using an intermediate surface or solvents, or other intermediate substances for the deposition

Organic electronics challenges



The organic electronics market will continue to grow significantly in the coming years. New materials, devices and applications will promote its use. To develop new devices, it is necessary to investigate the screening of molecules on substrates and to optimize the composition.

This research can be done with experimental techniques, such as scanning tunneling microscope (STM) or atomic force microscopy (AFM), using non-standard equipment, demanding conditions, etc. These facts slow down the process and limit the number of research groups that can benefit from it.

Vacuum sublimation methods are used for the purification and recrystallization of molecules and, on the other hand, to study the reactivity of materials on different substrates. Sublimation is an excellent and green solution for screening materials in organic electronics

How does our device work?

The new device enables an easy-to-use direct sublimation in surfaces, opening up a wide range of possibilities for the nature of the surfaces, including the possibility of the surface being a device itself.

With the new sublimator, the distance between the material and the surface can be adjusted, and sublimation parameters, such as temperature and pressure, can be optimized and controlled.

How does our method differ from current methods?

Current easy-to-use sublimation methods deposit crystalline materials on intermediate substrates, requiring additional steps to deposit on the desired substrates. Existing direct methods may need ultra-high vacuum sublimation equipment, complex equipment, implying great difficulties in preparing the samples.

Our method is a low-cost one-step direct sublimation method on surfaces and devices that do not require intermediate compounds neither ultra-high vacuum sublimation equipment, with optimized operation parameters for each case.



Advantages of our device

- » Direct deposition on the surface of interest.
- » The device can be used in standard R+D laboratories.
- » Adjustable distance between the substrate and the sample for a better control and reproducibility of the sublimation process.
- » Low cost device with interchangeable pieces, easy to replace.
- » Compatible with a huge number of surfaces of different nature, dimensions and functions, including final devices.
- » Significant cost reduction in the restricted frequency operational range.

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