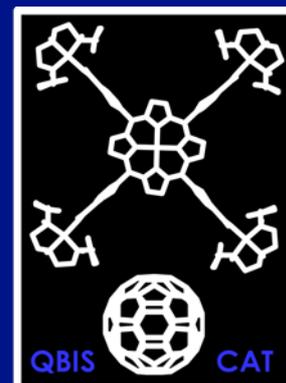


# TECHNOLOGICAL OFFER

## MOLECULAR NANOCAPSULES FOR FULLERENE SELECTIVE SEPARATION

Fullerenes have potential applications in multiple research fields such as materials science and medicine. However, these applications are limited in origin by the cost of purification of fullerenes. Despite the fact that fullerene mixtures are easily available at macroscopic quantities from fullerene soot, finding an efficient strategy to obtain these molecules in a pure form remains elusive, especially for higher fullerenes ( $C_n$ ,  $n > 70$ ). Nowadays, efficient chromatographic techniques are available for the purification of fullerenes, but still more sustainable, selective and versatile methodologies are required.



### TECHNOLOGY DESCRIPTION

This technology involves the synthesis of molecular nanocapsules capable of accommodating fullerenes of different sizes through a host-guest complexation event. Strikingly, a straightforward solid-washing experimental protocol has been designed that allows to selectively separating pure fullerenes from mixtures of different fullerenes. Remarkably, the nanocapsule is recyclable and it can be reused several times in the encapsulation-liberation cycle without the need to disable its structure or do any further purification.

### TIME-TO-MARKET

Technology optimized in the lab. Tests at large scale are required.

### APPLICATION AND TARGET MARKET

This technology can be applied in different markets as diverse as electronics or biomedicine. Pure fullerenes can be used as drugs in cancer treatment, applied in solar cells devices, microelectronics or energetic storage nanotechnology. Companies selling fullerenes might be interested in this technology.

### DEAL SOUGHT

License agreement.  
Development agreement.

### COMPETITIVE ADVANTAGES

- Straightforward fullerene purification.
- Time-efficient process and low solvent consuming.
- Sustainable technology: recyclable capsule.
- No chromatographic equipment required.
- Wide range of applications in nanotechnology and biomedicine.

### RESEARCH GROUP

Grup de Química  
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