

## Carbon 2018, Topic 2: Advanced Carbon Materials

### Resumen de los trabajos presentados durante Carbon 2018

---

**Marcos J. Granda Ferreira.** *Instituto Nacional del Carbón (CSIC)*

**Francisco Javier Narciso Romero.** *Universidad de Alicante*

**Ignacio Martín Gullón.** *Universidad de Alicante*

Topic\_02, Advanced Carbon Materials, compiled all those communications received within the topic of nanomaterials (nanotubes, nanofibers, etc.), fullerenes, carbon fibers or carbon composite materials, among others. 148 contributions were presented from Monday to Thursday: 8 keynotes, 56 oral communications and 84 in the form of poster. These communications represented a total of 27 countries, being China, Korea, Japan and Spain, with 21, 16, 16 and 13 contributions, respectively, the most representative countries. By continents, Asia with 68 and Europe with 53, were the most represented. These contributions ranged from fundamental aspects to theoretical developments, combining from classic materials, such as carbon fibers, which seem to revive a new apogee, to latest generation of materials with nanometric and highly hierarchical structures. The 8 keynotes dealt with very different matters: the use of some solid polymers to be directly transformed into carbon nanotubes by plain heat-treatment; a new approach to nanotube processing based on reductive charging to form pure nanotubides which can be easily

purified or optionally functionalized; routes to obtain carbon fiber reinforced thermoplastics with extremely high mechanical properties, good thermal stability and good recyclability for automotive application; optimization of the spinning process parameters (e.g., mass and energy transfer, phase changes or fluid flow behavior) for the production of carbon nanotube fibers; experimental verification, using flow visualization techniques, of the flow circulation at inlet and outlet of horizontal quartz tube reactors; chirality effects in the structure of nanotubes grown according to shape and solid-state nature of nanoparticles "sides"; preparation and characterization of lignin-derived carbon fibers produced by electrospinning and study of their potential application in adsorption, catalytical and electrochemical processes; and findings about the effects of fiber length distribution in chopped rayon fibers at different stages of processing and also some insights into melt, flow and cure behavior of phenolic resin obtained from implementation of several advanced techniques.