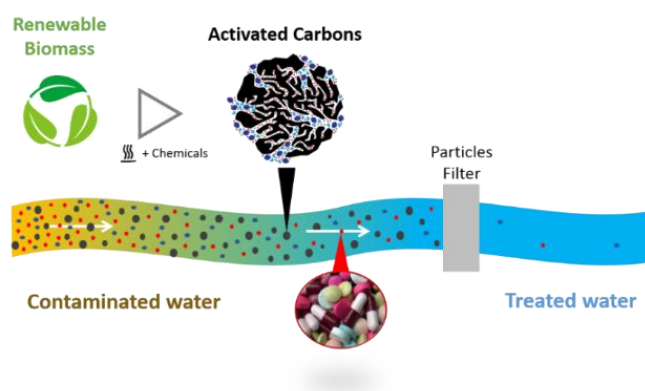


## From biomass to carbon materials to enhance water treatment technologies



### **Processo de produção de carvão activado a partir de material de cortiça**

S.P.Martins, A.S. Mestre, A.P. Carvalho and P.B. Correia  
2012, PT 106637 B, Portugal.

### **Chars from gasification of coal and pine activated with $K_2CO_3$ : Acetaminophen and caffeine adsorption from aqueous solutions**

M.Galhetas, A.S.Mestre, M.L. Pinto, I. Gulyurtlu, H. Lopes and A.P. Carvalho  
J. Colloid Interface Sci., 2014, 433, 94-103.

### **Sustainable activated carbons prepared from a sucrose-derived hydrochar: remarkable adsorbents for pharmaceutical compounds.**

A.S. Mestre, E. Tyszko, M.A. Andrade, M. Galhetas, C. Freire and A.P. Carvalho  
RSC Adv, 2015, 5 (25), 19696-19707.

Water contamination with pharmaceutical compounds is a reality worldwide and scientists and governmental entities consider that this kind of contamination may require legislative intervention. In fact, pharmaceutical compounds appear in a Watch List in the 2013/39/EU directive and, for now, activated carbons which are non-specific adsorbents, appear as the best available decontamination technology for the removal of the pollutants that have a recalcitrant behaviour in conventional water treatment plants.

The biomass-derived activated carbons developed in the Adsorption and Adsorbent Materials group of CQB outperform commercial samples in the ability to remove even the most recalcitrant pharmaceuticals from water.