

Graphite whiskers derived from waste coffee grounds treated at high temperature

ABSTRACT

Graphite whiskers (GWs) are obtained from coffee grounds (CGs) treated at 2500 °C for 1 h in the presence of Ar gas at 1 atm. The majority of the GWs formed inside the CGs shell are rod-like with a conical tip with diameter and length in the range between 1 to 3 μm and 4 to 10 μm, respectively. At first, the carbon layer might be grown in a turbostratic manner, and then progressively graphitized at higher temperature. The strong G' peak intensity might be induced by the disclination of graphitized carbon layers.