

Classic Applications

16 B \$ Industry!



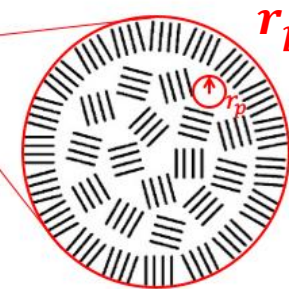
Batteries

Supercapacitors



Porosity & Crystallinity Dynamics of CB during Internal & Surface Oxidation

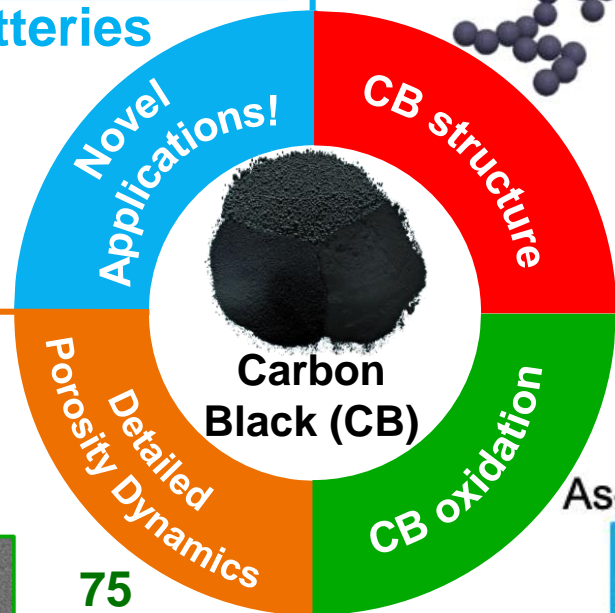
Georgios Kelesidis, ETH Zurich, Switzerland



r_p : Pore radius

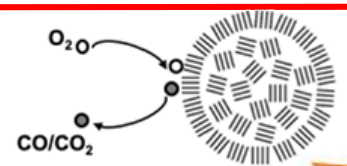
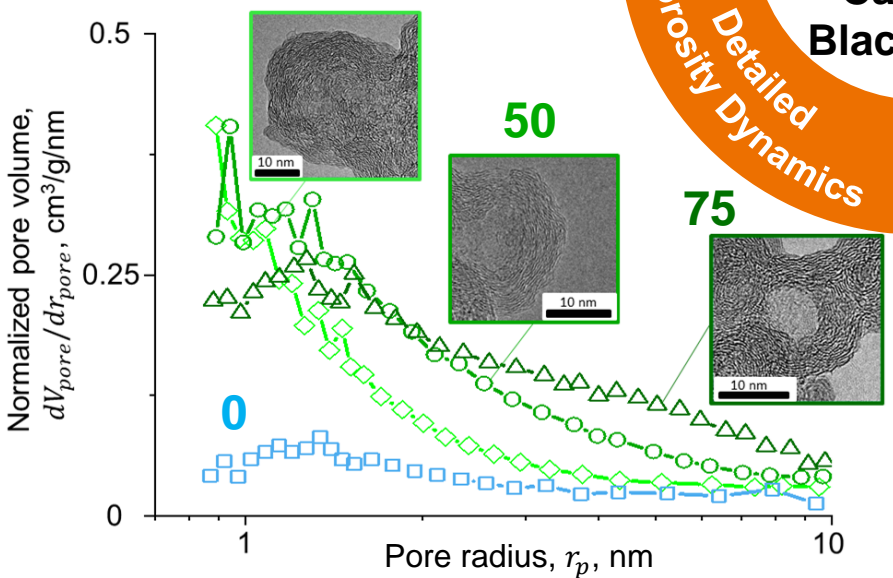
Specific Surface Area:
 $SSA = \frac{\text{Area}}{\text{Mass}}$

Large SSA & r_p essential for energy applications!

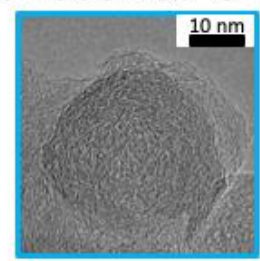


Carbon Black (CB)

25 % conversion



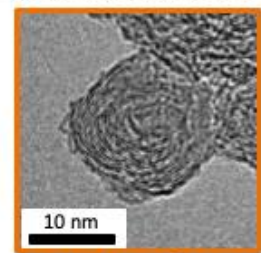
As-received CB



Internal oxidation enhances CB porosity!
 Internal SSA = 240 m²/g

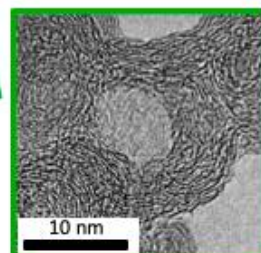
800°C

Oxidized CB



453 m²/g

550°C



939 m²/g

