Supporting Informations

A simple synthesis of sulfur-doped graphene using sulfur powder by chemical vapor deposition

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More details concerning utilized techniques:

FESEM, elemental mapping and EDS:

Instrument: Mira 3-XMU FE-SEM
Company: Tescan Co, Brno, Czech Republic
Operating Voltage: 15 kV
Detectors: BSE (Back-scattered electron), In-Beam BSE and In-Beam secondary electron detector
Max resolution: 7.0×10^6

TEM:

Instrument: EM208S TEM micro-scope
Company: Philips Co, The Netherland
Operating Voltage: 120.0 kV
Resolution: 2 nm
Imaging modes: BF (bright field) and diffraction

XRD:

Instrument: XPERT
Company: Philips Co, The Netherland
Operating Voltage: 40 kV
Current: 30 mA
Radiation sources: Line K_α of Cu

XPS:

Instrument: Specs model EA10 plus
Company: Bestec Co, Germany
Operating Voltage: 15 kV
Radiation sources: Line K_α of Al
Detecting elements: All except H and He

Raman spectroscopy:

Instrument: Senterra
Company: Bruker Co, USA
Laser excitation: 514 nm
Operating Voltage: 15 kV
Detectors: CCD, point to point analysis
Sample: Powder and solid films

Adsorption-desorption experiments:

Instrument: Finesorb 3010
Company: Finetec Co, China
Operating temperature: -196°C
Pore size analyzing: 1-100 nm