
Biogenic high-performance carbons with different nanostructures

Cellular structure of carbonised biomass, 2h slow pyrolysis at 800°C

Object of research:

- Biogenic functional and structural materials
- Assessment of biomass (lignin, cellulose, hemicellulose)
- Thermal and chemical treatment of biomass
- Adapted pyrolysis of biomass for the generation of carbons and modified carbons

High-resolution TEM image
Pyrolysis of wheat stems
at 800°C, 2h)

Key words

- Pyrolysis
- Biomass
- Raman spectroscopy
- X-ray diffractometry
- FT-IR spectroscopy
- Particulate, fibre and compound production
- Mechanical properties
- Electrical properties

Third-party funds provider:

- Guideline for the Funding of Research
TMWWDG

Results:

- Substitution of petroleum based carbons
- Carbons for electrodes, storage and catalytic materials
- Carbons for fibres or fullerenes
- Characteristics test of biogenic cellular structures of the biomasses
- Characterisation of biomasses in respect of lignin, cellulose, hemicellulose percentages

Institutes involved and contact details:

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- From 1.10.2015 (ongoing)

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- € 403,000 (X-ray diffractometer with HT oven)
- € 149,400 € (BUNT infrastructure measure)