

**THE FIFTH YUGOSLAV MATERIALS
RESEARCH SOCIETY CONFERENCE**

YUCOMAT 2003

**Programme
and
The Book of Abstracts**

**HERCEG NOVI,
September 15-19, 2003**

Organized by:

YUGOSLAV MATERIALS RESEARCH SOCIETY

and

INSTITUTE OF TECHNICAL SCIENCES OF THE SASA

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P.S.B.19.

SURFACE COMPOSITION AND ADSORPTION PROPERTIES OF ACTIVATED CARBON CLOTH

T. Vasiljević¹, M. Bačić¹, M. Laušević¹, A. Onjia²

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Surface properties of activated carbons have shown to play an important role in adsorption process. The presence of various functional groups (such as phenolic, carbonyl, carboxylic) on the carbon surface depends on the nature of its base component and the activation technique employed in the manufacturing process.

The aim of this work is to gain a better fundamental understanding of the nature of surface oxide sites present on activated carbon cloth surface (ACC), and their role in the adsorption process. BET surface areas of ACC were measured by means of benzene adsorption isotherms. The amount and the type of surface oxygen groups were determined by thermogravimetric analysis and classical titration following Boehm's method. Batch adsorption tests were used to evaluate equilibrium adsorption isotherms of phenol on ACC.

It was shown that both surface area and surface groups composition had impact on adsorption properties of ACC against phenol.

P.S.B.20.

MICROABRASION METHOD FOR THICKNESS DETERMINATION OF PLASMA NITRIDED LAYER

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Calo-test method of microabrasion has been usually used for thickness measurement of thin, compact and clearly distinctive surface layers in hard coatings area. Authors developed application of this technique to measuring thickness of visually not distinctive layers in plasma nitriding. Samples made of various steel grades were plasma nitrided and then calo-tested. Chemical process was applied to visualize structure of different layers on abraded places. Observed relations of layers color and structure were steel grade dependent. Possibility was confirmed to determine the thickness of compound nitrided layer within 5% accuracy by measuring rings radii of visualized layer cross-section in the calo-test trace.