

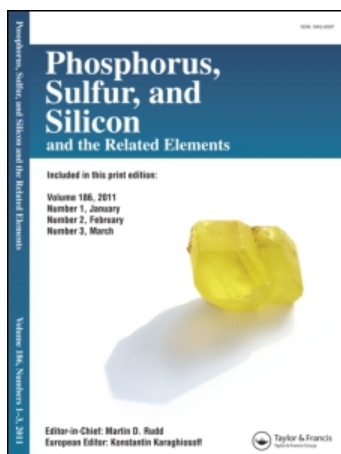
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Preparation and Catalytic Testing of Sulfonic Acid Functionalized Activated Carbons

L. Guerreiro^a; I. Fonseca^a; R. M. Martin-Aranda^b; A. M. Ramos^c; A. M. Botelho do Rego^d; J. Vital^e

^a Rede de Qu'ímica e Tecnologia, Centro de Qu'ímica Fina e Biotecnologia, Departamento de Qu'ímica, FCT, Universidade Nova de Lisboa, Caparica, Portugal ^b Departamento de Qu'ímica Inorgânica y Qu'ímica Técnica, Universidad Nacional de Educación a Distancia, Madrid, Spain ^c Rede de Qu'ímica e Tecnologia, Centro de Qu'ímica Fina e Biotecnologia, Departamento de Qu'ímica, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal ^d Centro de Qu'ímica-Física e Molecular, Complexo Interdisciplinar, Instituto Superior Técnico, Lisboa, Portugal ^e Rede de Qu'ímica e Tecnologia, Centro de Qu'ímica Fina e Biotecnologia, Departamento de Qu'ímica, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal

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L. Guerreiro

I. Fonseca

Rede de Química e Tecnologia, Centro de Química Fina e Biotecnologia, Departamento de Química, FCT, Universidade Nova de Lisboa, Caparica, Portugal

R. M. Martin-Aranda

Departamento de Química Inorgánica y Química Técnica, Universidad Nacional de Educación a Distancia, Madrid, Spain

A. M. Ramos

Rede de Química e Tecnologia, Centro de Química Fina e Biotecnologia, Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal

A. M. Botelho do Rego

Centro de Química-Física e Molecular, Complexo Interdisciplinar, Instituto Superior Técnico, Lisboa, Portugal

J. Vital

Rede de Química e Tecnologia, Centro de Química Fina e Biotecnologia, Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal

INTRODUCTION

Recently the synthesis of mesoporous silicas containing immobilized sulfonic acid groups that behave as active and selective catalysts in esterification reactions has been reported.¹

Activated carbons are high-surface-area materials, exhibiting good stability, good mechanical resistance, and high porosity. Because of these properties, they are widely used in heterogeneous catalysis as catalysts and catalyst supports. Their high content in sp² hybridized

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Address correspondence to J. Vital, REQUIMTE, CQFB, Departamento de Química, FCT, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal. E-mail: jmv@dq.fct.unl.pt

carbon atoms, which can easily combine with other elements (e.g., oxygen) to form a variety of surface groups, makes them suitable to be tailored by convenient thermal or chemical processes.^{2,3}

In the present work we describe the preparation of activated carbon-based catalysts functionalized with sulfonic groups and their use in the transesterification of ethyl benzoate. For comparison we study the same reaction in the presence of SO₃H-MCM-41.

RESULTS

The obtained data shows clearly that functionalization with sulfonic acid groups was achieved, at least in the sample obtained by direct anchoring of 3,6-dioxa-1,8-octanedithiol, which shows reasonably good catalytic activity toward the transesterification of ethyl benzoate with methanol. According to the XPS spectra obtained for this sample, the catalytic activity seems to be related to the presence of sulfonic groups.

Comparing the sulfonic functionalized activated carbon with the SO₃H-MCM-41, it was observed that the modified carbons exhibit higher catalytic activity.

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