

Fifteenth Annual Conference

Hunguest Hotel Sun Resort Herceg Novi, Montenegro, September 2-6, 2013
<http://www.mrs-serbia.org.rs>

PROGRAMME &
THE BOOK OF ABSTRACTS

Organised by

MATERIALS RESEARCH SOCIETY OF SERBIA

under the auspices of

FEDERATION OF EUROPEAN MATERIALS SOCIETIES (FEMS)

MATERIALS RESEARCH SOCIETY (MRS)

FIFTEENTH ANNUAL CONFERENCE

YUCOMAT 2013

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**Federation of European Material Societies
and
Materials Research Society**

P.S.A.31.

ISOCITRIC ACID PRODUCTION BY *YARROWIA LIPOLYTICA* YEAST

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Threo-Ds-isocitric (ICA) is used as a building block for chemical synthesis, as a marker to detect the authenticity citrus juices, as an antistress, antihypoxic and immune active agent. Currently, ICA is isolated from *Sedum spectabile* plant at high price (up to 500 €/g). In this study, we developed the process of microbiological production of ICA from rapeseed oil using *Yarrowia lipolytica* yeast strains. Under optimal conditions *Y. lipolytica* produced up to 70 g/L of ICA with the yield of 80%.

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P.S.A.32.

MECHANOCHEMICAL MODIFICATION OF GLAUCONITE, DIATOMITE AND VERMICULITE TO OBTAIN SORBENTS

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Minerals (glauconite, glauconite sand, diatomite, and vermiculite) from different deposits were used as starting materials. Minerals were crushed and homogenized (including sodium dihydrogen phosphate as additives) using a steel or agate one-ball vibratory mill. To obtain a sorbent mixture of mineral and NaH₂PO₄ at different ratios (1:1, 2:1, 3:1, 4:1, respectively) were subjected to mechanical activation (MA) in a planetary mill Pulverisette 6. MA products were studied by XRD, derivatography, DTA, DSC and IR spectroscopy. Sorption capacity of sorbents studied in static and constant stirring of the model solutions with concentrations of manganese sulfate 60–1000 µg/dm³. Increasing the sorption properties of MA samples can be explained by the formation of aqua-phosphate glasses. Aqua-phosphate glasses are new sorption centers in the structure of minerals.

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