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13th Joint Conference on Chemistry

7-8 September 2018
Semarang, Indonesia

Programme Booklet

Hosted by:



Chemistry Department
Diponegoro University

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Hydrolysis of Tapioca Starch using Amylase Immobilised on Magnetic Mesoporous Cellular Foam Silica (MCF-(9.2T-3D))

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Abstract

Innovations and studies of magnetic mesoporous silica for supports of alpha-amylase and glucoamylase immobilisation have not been performed because the magnetic supports are only associated nanoparticles (pure or composite). Therefore, it is desirable to study the method of synthesis of magnetic mesoporous cellular foam silica, to observe the immobilization method of amylase enzymes (alpha- and gluco) on this supports, and to know the characteristics of these immobilized enzymes in the starch hydrolysis process. The synthesis of magnetic MCF silica is an attempt to insert nano Fe compounds into the siliceous matrix. Variations in the number of nanoparticles and MCF silica components as well as other operating condition factors were studied to determine the magnetic support products based on BET, FTIR and SEM-EDX analyzes. The operating conditions of the immobilization process of alpha-amylase and glucoamylase enzyme on the support were varied during the process to know their effects in which the end result is a large number of the enzymes immobilized onto the support concluded from the analysis of protein content, FTIR and SEM-EDX. Starch hydrolysis was observed by type of both enzymes (free and immobilized) where the liquefaction stage observation was performed with alpha-amylase enzyme, while the saccharification stage was performed with glucoamylase enzyme.





13th Joint Conference on Chemistry

Certificate of Presentation

This is to certify that

Joni Agustian

has presented a paper entitled

**Hydrolysis of Tapioca Starch using Amylase Immobilised on
Magnetic Mesostructured Cellular Foam Silica (MCF-(9.2T-3D))**

at the 13th Joint Conference on Chemistry held on 7-8 September 2018 in
Semarang that organised by Chemistry Department, Diponegoro University

Semarang, 8 September 2018

The Chair of
13th Joint Conference on Chemistry

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