CONFERENCE ABSTRACTS

International Student Conference

“Science and Progress”

DAAD

Санкт-Петербургский государственный университет

Freie Universität Berlin

German-Russian Interdisciplinary Science Center

St. Petersburg — Peterhof
November, 9–11
2021

CONFERENCE ABSTRACTS
International Student Conference “Science and Progress” —
SPb.: SBORKA, 2021-224 p.p.
ISBN 978-5-85263-109-1

Organizing Committee

Prof. Dr. E. Kustova	Chair of the Organizing Committee, SPbSU
Prof. Dr. A. Manshina	G-RISC Scientific Coordinator, SPbSU
Prof. Dr. E. Rühl	G-RISC Scientific Coordinator, FU Berlin

Program Committee

Dr. A. Gubal	Institute of Chemistry, SPbSU
Dr. D. Mamonova	Institute of Chemistry, SPbSU
Prof. Dr. D. Kirsanov	Institute of Chemistry, SPbSU
Prof. Dr. R. Islamova	Institute of Chemistry, SPbSU
Prof. Dr. A. Penkova	Institute of Chemistry, SPbSU
Prof. Dr. E. Grachova	Institute of Chemistry, SPbSU
Prof. Dr. V. Troyan	Faculty of Physics, SPbSU
Prof. Dr. T. Mokaev	Faculty of Mathematics and Mechanics, SPbSU
Prof. Dr. N. Kuznetsov	Faculty of Mathematics and Mechanics, SPbSU
Prof. Dr. N. Resnina	Faculty of Mathematics and Mechanics, SPbSU
Prof. Dr. E. Filatova	Faculty of Physics, SPbSU
Prof. Dr. N. Zernov	Faculty of Physics, SPbSU
Prof. Dr. M. Bisyarin	Faculty of Physics, SPbSU
Prof. Dr. N. Timofeev	Faculty of Physics, SPbSU
Prof. Dr. Yu. Chizhov	Faculty of Physics, SPbSU
Prof. Dr. Yu. Pismak	Faculty of Physics, SPbSU
Prof. Dr. N. Tsvetkov	Faculty of Physics, SPbSU
Prof. Dr. V. Chizhik	Faculty of Physics, SPbSU
Dr. V. Chirkov	Faculty of Physics, SPbSU

Technical Committee

Head of the Technical Committee - Maksim Melnik
Members – Maksim Renev, Maria Serova, Daria Mamonova,
Daria Kozina, Vassily Medvedev, Maria Kochetkova, Roman Shilov,
Danila Myznikov, Danil Krutin, Vlada Glavinskaya, Anna Bechina.
Desktop publishing – Aleksei Serov

Contacts

https://events.spbu.ru/events/sp-2021
science-and-progress@spbu.ru

A. Chemistry

Hydrophobic Deep Eutectic Solvents for the Separation of Zearalenone from Bread Followed by Liquid Chromatographic Determination

Pavlova K.V.[1], Pochivalov A.S.[1], Bulatov A.V.[1]
st067859@student.spbu.ru

[1]*Saint Petersburg State University, Saint Petersburg, Russia*

Deep eutectic solvents (DES), having similar properties to ionic liquids, are increasingly used in various fields of analytical chemistry. They have been proven to be an environmentally safe alternative to commonly used toxic organic extractants such as chlorinated organic solvents. DES is a mixture of two or more precursors with a melting point lower than that of the individual components. The composition of DES can be easily varied, which allows tuning its properties for selective and efficient extraction of the target compound. In this study, hydrophobic DESs based on menthol and long-chain alcohols, stable in aqueous medium, were studied for the separation of zearalenone from bread for the first time.

The main problems of food analysis are low concentrations of analytes and the complexity of matrices, that contain many interfering components, so the analyte should be extracted and preconcentrated prior to its determination. To solve this analytical task, an effective, fast and sensitive dispersive liquid-liquid microextraction method based on the hydrophobic deep eutectic solvents was developed in this work. The suggested sample preparation procedure (Fig. 1) was coupled to high-performance liquid chromatography with fluorometric detection and allowed zearalenone quantification in food at trace level.

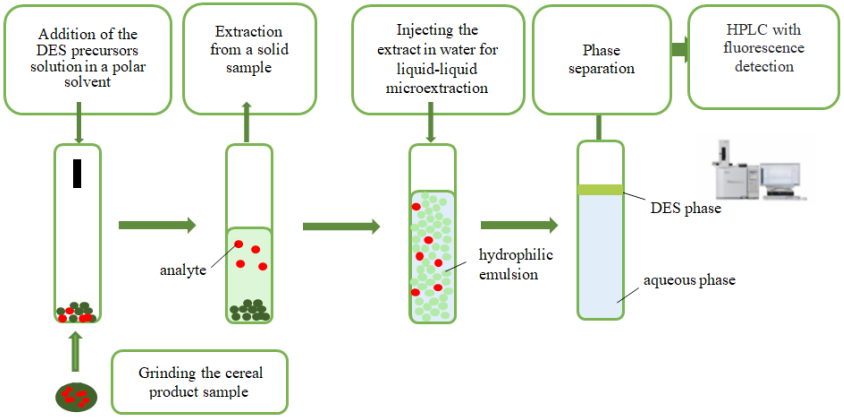

Fig. 1. Sample preparation procedure.

Acknowledgments: This work was supported by the Russian Science Foundation (project No 21-13-00020, https://rscf.ru/project/21-13-00020/).