

BOOK OF ABSTRACTS

FLOW ANALYSIS XV

KRAKOW, POLAND 2022



JUNE 26 – JULY 1

CO-FINANCING



Ministry of Education
and Science

PATRONAGE

HONORARY



JAGIELLONIAN UNIVERSITY
IN KRAKÓW

SCIENTIFIC



EuChemS
European Chemical Society
—Division of Analytical Chemistry—



MEDIA

ANALITYKA

Published by	Department of Analytical Chemistry, Faculty of Chemistry, Jagiellonian University in Krakow, Krakow 2022
Editorial board	Joanna Kozak Anna Telk Aneta Woźniakiewicz Justyna Paluch
Typeset by	Anna Telk Aneta Woźniakiewicz Alicja Chromiec Marcelina Rusin Anna Saldan
Graphic design	Sonia Furmanek (cover of Book of Abstracts, conference logo, banner, and certificate) Anna Telk (Book of Abstracts)
ISBN	978-83-963504-1-1
License	All abstracts have been licensed to Jagiellonian University in Krakow, according to Creative Commons Attribution 4.0 International (CC BY 4.0).



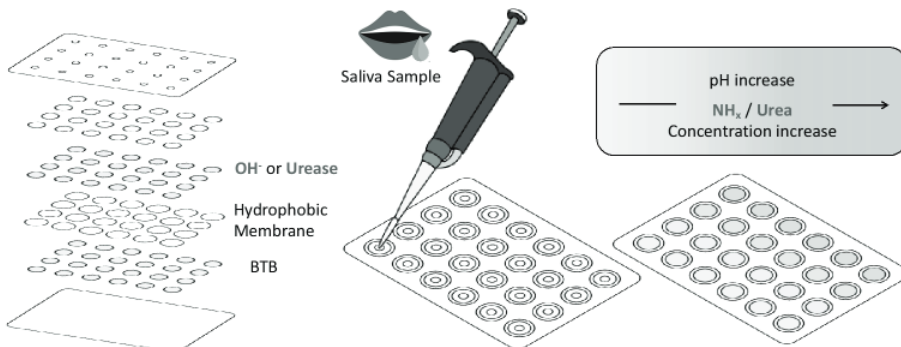
On-hand tool for CKD monitoring – design of a couple of μ PADs for ammonium and urea determination in saliva

Francisca T. S. M. Ferreira, António O. S. S. Rangel, Raquel B. R. Mesquita

Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Rua Diogo Botelho 1327, 4169-005, Porto, Portugal

Chronic Kidney Disease (CKD), is a condition in which the kidneys malfunction, causing the accumulation of metabolic toxins. Urea is a nitrogenous product of the protein metabolism by the urea cycle, resulting from the toxic NH_x conversion. Since its primary form of secretion is the kidney, urea is one of the most used biomarkers for kidney failure. Microfluidic paper-based analytical devices (μ PADs) are a recent concept that has gained a lot of attention in the last few years as on-hand, point-of-care biosensors. These devices have gained a great interest since are capable of performing the analytical determinations in less time and with a more simpler, economic and user-friendly procedure.

In this work, a couple of μ PADs were developed for the determination of NH_x and urea in saliva samples. The determination was based on color change of bromotymol blue indicator (BTB) after the ammonia diffusion through a hydrophobic membrane [1].



References

[1] Y. Thepchuay, R. B. R. Mesquita, D. Nacaphicha, A. O. S. S. Rangel, *Anal. Bioanal. Chem.* 412 (2020) 3167.

Acknowledgments

F.T.S.M.F. thanks FCT—Fundação para a Ciência e a Tecnologia for the grant SFRH/BD/144962/2019. This work was supported by National Funds from FCT—Fundação para a Ciência e a Tecnologia through project UIDB/50016/2020.

Francisca T. S. M. Ferreira would like to thank the PROM Programme – “International exchange scholarship for doctoral students and academic staff” for financing participation in the conference.