

RNDr. Anna Němečková (Makrlíková)

Date of birth: 25. 8. 1990
Nationality: Czech Republic
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EDUCATION

- 2015 – present **Analytical Chemistry** (doctoral study)
Dissertation Thesis topic: *Voltammetric and amperometric determination of homovanillic, vanillylmandelic, and 5-hydroxyindole-3-acetic acid* (supervisor: Prof. RNDr. Jiří Barek, CSc.).
Charles University, Faculty of Science
- 2013 – 2015 **Analytical Chemistry** (master study)
Diploma Thesis: *Determination of selected components in human urine with electrophoresis in short capillary*
(supervisor: Prof. RNDr. František Opekar, CSc.).
Charles University in Prague, Faculty of Science
- 2010 – 2013 **Chemistry in Natural Sciences** (bachelor study)
Bachelor Thesis: *Determination of lithium in mineral waters using electrophoresis in short capillary*
(supervisor: Prof. RNDr. František Opekar, CSc.).
Charles University in Prague, Faculty of Science
- 2002 – 2010 **Church Grammar School, Pilsen**

EMPLOYMENT/PRACTISE

- 2/2019 – 7/2019 **Institute of Physics of the Czech Academy of Sciences, Prague**
Researcher
Research devoted to boron doped diamond electrode.
- 4/2017 – 12/2018 **Faculty of Science, Charles University, Prague**
Researcher
Research devoted to electrochemical methods.
- 10/2016 – 12/2016 **Internship at Institute of Analytical Chemistry, Chemo- und Biosensors, University of Regensburg, Germany**
- 3/2016 – present **J. Heyrovský Institute of Physical Chemistry of the Czech Academy of Sciences, Prague**
Researcher
Research devoted to the determination of tumour markers in biological samples.
- 2/2016 – 8/2016 **Quinta-Analytica s.r.o., Prague**
Sample administrator

- 7/2014 **Research and Testing Institute s.r.o.**, Pilsen
Professional training in chemical laboratories focused on chemical analysis of metals, alloys, and other inorganic materials, petroleum and organic substances.
(AAS, optical emission spectroscopy (OES), IR and UV-VIS spectroscopy, classical analytical methods)
- 2007 – 2012 **Biopsy Laboratory s.r.o.**, Pilsen (biopsy and cytology laboratory)
General laboratory work, handling of histological samples.

GRANT

- 2016 – 2018 **Grant Agency of Charles University**, project 734216.
Determination of selected biomarkers in human urine by flow methods with electrochemical and spectrophotometric detection.

LIST OF PUBLICATIONS

1. **A. Makrlíková**, F. Opekar, P. Tůma, Pressure-assisted introduction of urine samples into a short capillary for electrophoretic separation with contactless conductivity and UV spectrometry detection, *Electrophoresis* 36 (2015) 1962–1968.
2. **A. Makrlíková**, E. Ktena, A. Economou, J. Fischer, T. Navrátil, J. Barek, V. Vyskočil, Voltammetric determination of tumor biomarkers for neuroblastoma (homovanillic acid, vanillylmandelic acid, and 5-hydroxyindole-3-acetic acid) at screen-printed carbon electrodes, *Electroanalysis* 29 (2017) 146–153.
3. **A. Makrlíková**, J. Barek, V. Vyskočil, T. Navrátil, Electrochemical methods for the determination of homovanillic, vanillylmandelic, and 5-hydroxy-3-indole-acetic acid as cancer biomarkers (in Czech), *Chemické Listy* 112 (2018) 605–615.
4. **A. Němečková-Makrlíková**, F.-M. Matysik, T. Navrátil, J. Barek, V. Vyskočil, Determination of three tumor biomarkers (homovanillic acid, vanillylmandelic acid, and 5-hydroxyindole-3-acetic acid) using flow injection analysis with amperometric detection, *Electroanalysis* 31 (2019) 303–308.
5. **A. Němečková-Makrlíková**, T. Navrátil, J. Barek, P. Štenclová, A. Kromka, V. Vyskočil, Determination of tumour biomarkers homovanillic and vanillylmandelic acid using flow injection analysis with amperometric detection at a boron doped diamond electrode, *Analytica Chimica Acta* 1087 (2019) 44–50.
6. **A. Němečková-Makrlíková**, J. Barek, T. Navrátil, J. Fischer, V. Vyskočil, H. Dejmková, Determination of tumour biomarkers homovanillic acid, vanillylmandelic acid, and 5-hydroxyindole-3-acetic acid in human urine using HPLC with electrochemical detection – submitted to *Journal of Electroanalytical Chemistry* (2020).

LANGUAGES

Czech: native language
English: FCE certificate
German: elementary