

# Comparison of ZrO<sub>2</sub> particles and polyaniline as additives in polystyrene-based sorbents for the micro-solid phase extraction of psychoactive drugs from biofluids

Paweł Stelmaszczyk <sup>1,2</sup>, Mateusz Iwan <sup>1</sup>, Dominika Pawcenis <sup>3</sup> and Renata Wietecha-Postuszny <sup>1,\*</sup>

<sup>1</sup> Laboratory for Forensic Chemistry, Department of Analytical Chemistry, Faculty of Chemistry, Jagiellonian University in Kraków, Gronostajowa St. 2, 30-387 Kraków, Poland; pawel.stelmaszczyk@doctoral.uj.edu.pl (P.S.); mateusz.iwan@alumni.uj.edu.pl (M.I.)

<sup>2</sup> Doctoral School of Exact and Natural Sciences, Faculty of Chemistry, Jagiellonian University in Kraków, Gronostajowa St. 2, 30-387 Kraków, Poland

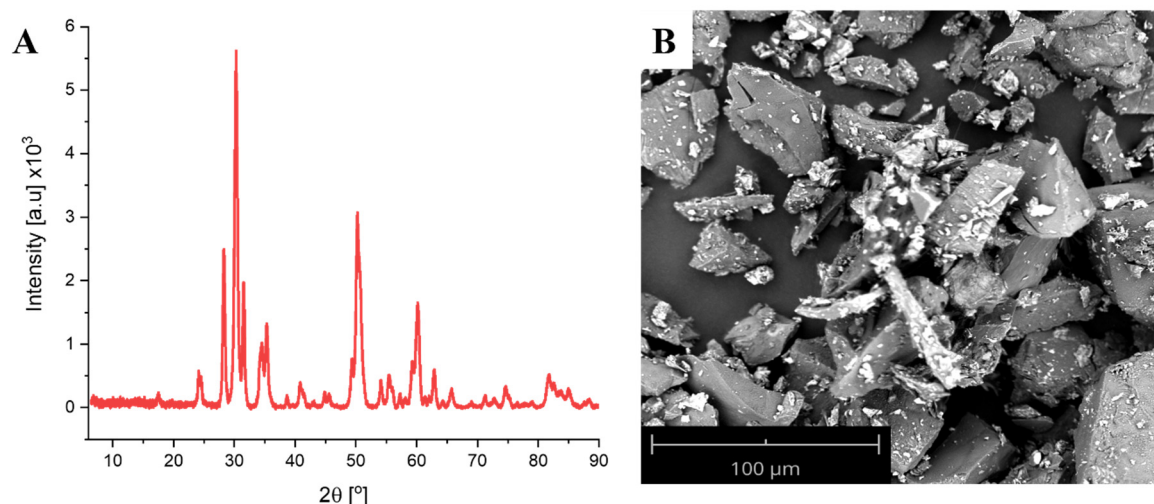
<sup>3</sup> Faculty of Chemistry, Jagiellonian University in Kraków, Gronostajowa St. 2, 30-387 Kraków, Poland; pawcenis@chemia.uj.edu.pl

\* Correspondence: wietecha@chemia.uj.edu.pl or renata.wietecha-posluszny@uj.edu.pl

**Keywords:** electrospun fibers, solid phase microextraction, sorbents, polystyrene, psychoactive substances

## Table of contents:

1. XRD pattern and SEM image of synthesized ZrO<sub>2</sub> particles
2. Calculated diameter of synthesized ZrO<sub>2</sub> particles based on the XRD pattern



**Figure S1.** A – XRD pattern ( $\lambda = 1.5405$  Å, Bragg-Brentano geometry,  $2\theta$  range: 5-90°) of synthesized ZrO<sub>2</sub> particles; B – SEM image of obtained ZrO<sub>2</sub> particles. Both XRD pattern and SEM image were obtained for ZrO<sub>2</sub> particles before calcination or washing with HNO<sub>3</sub>.

**Table S1.** The calculated diameter of synthesized ZrO<sub>2</sub> particles based on the XRD pattern and Scherrer equation.

<b>2<math>\theta</math> (°)</b>	<b><math>\theta</math> (°)</b>	<b><i>B</i> (rad)</b>	<b><i>D<sub>hkl</sub></i> (nm)</b>
28.2	14.1	0.006801	21.02
30.3	15.1	0.009339	15.38
31.5	15.8	0.006840	21.06
34.5	17.3	0.014770	9.83
35.3	17.7	0.009145	15.91
50.3	25.1	0.015330	9.99
60.1	30.1	0.011830	13.54