

Supervisor's evaluation

MSc. Volodymyr Pauk is a student of the doctoral study program of analytical chemistry at Department of Analytical Chemistry, Faculty of Science, Palacký University in Olomouc. He graduated from Chemical Faculty, Uzhorod National University and started his PhD study in 2010. His research work is focused on the area of mass spectrometry and supercritical fluid chromatography.

His doctoral thesis is entitled "Forensic applications of mass spectrometry". He has been interested in two topics, application of mass spectrometry or supercritical fluid chromatography/mass spectrometry to evaluation of artworks and application of SFC/MS to new designer drug analysis. New procedure was developed for recognition of two blue pigments, Prussian blue and indigo. Prussian blue was successfully detected in a microsample of the painting 'Crucifixion' from the St. Šebestián Church on Saint Hill in Mikulov, the Czech Republic. It dated the sampled layer to 18th century or newer period. SFC/MS of sugars was applied to discriminate plant gums which might also be useful for evaluation of artworks. Finally, chromatographic behavior of some cathinones and phenylethylamines was studied and a fast SFC/MS method was developed. The selected new designer drugs were effectively distinguished in less than 1.7 min. The method is promising for drug screening. He published his results in Journal of Mass Spectrometry and Journal of Chromatography A, he prepared and published a review in Journal of Separation Science. The novelty of his work, its quality, and his conclusions were verified in reviewing process of prestigious analytical journals. MSc. Volodymyr Pauk has been able to evaluate critically relevant scientific information, and to use it in his research. He has proved his ability to prepare, carry out and evaluate experiments independently. He has been hard-working with enthusiasm.

MSc. V. Pauk accomplished all planned exams, he fulfilled a foreign three months stay at Department of Chemistry, University of Washington, Seattle, USA, under supervision of prof. František Tureček and dr. Michael Volný. He participated in two projects of University Development Fund, and he is a member of a research team of the project Kontakt LH14064 "Analytical tools for fast identification of new designer drugs" supported by Ministry of education, youth and sports of the Czech Republic. He was active in contract research projects covering cooperation with different companies (Waters, Contipro, Novato, Atotech, Synthesia and TEVA Czech Industries). He was invited to present some results on seminars

organized by Waters or Synthesia. MSc. Volodymyr Pauk participated in teaching for three semesters and he was engaged in popularization activities of our faculty. He passed a final state exam on June 6th, 2014.

I can state that Volodymyr Pauk successfully solved his research tasks. He has demonstrated his ability to critically evaluate experimental data, and to finalize his research and to prepare publications. He has widely participated in departmental activities covering research, grants, contract research, teaching, and popularization of chemistry. I can conclude that Volodymyr Pauk is a student with high level of theoretical knowledge, with interest in research, very skillful in experimental work. After successful defense of his doctoral thesis, I recommend, without doubt, to confer Volodymyr Pauk PhD degree.

Olomouc, December 2nd, 2015



Prof. RNDr. Karel Lemr, Ph.D.

supervisor

Department of Analytical Chemistry