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Comments

on the thesis presented by Derouiche Abdennour entitled “Influence of hydrate formation on the retention parameters of analytes in reversed-phase HPLC” presented for obtaining a degree of a Candidate of Science in Scientific Specialty 1.4.2. Analytical Chemistry– The Saint-Petersburg State University

The thesis presented by Derouiche Abdennour on the topic “Influence of hydrate formation on the retention parameters of analytes in reversed-phase HPLC” describes interesting research on the less studied topic related to high-performance liquid chromatography (HPLC). Formation of hydrates in aqueous-organic mobile phases may affect not only retention characteristics but also detectability of studied analytes. The topic of the thesis is novel and of significant theoretical and practical value.

The thesis work is presented on 138 printed pages, contains 3 chapters, 21 tables, 22 figures, conclusions and 178 references.

Chapter 1 (Literature review) is presented on the pages 13-34 and compactly deals with the principal features of the reversed-phase HPLC, recurrent approximation approach to retention times in HPLC, retention index systems in reversed phase HPLC and previous studied and the detection of hydrates in HPLC. Overview of the literature related to the topic of the present thesis is complete and the novelty and value of the present thesis is well defined.

Chapter 2 describes the experimental methodology used by PhD candidate in order to achieve the goals of the study. It is interesting to note that a set of novel organic compounds were synthesized and used in the present work. It is also interesting that the PhD candidate carefully analyzed sources of potential experimental errors and considered these when observing the effect of possible analyte-hydration on the chromatographic retention.

Chapter 3 (Results and Discussion) represent a major part of the thesis and summarizes the experimental results collected in the frame of the present thesis, as well as discussion of the obtained

results. The results of this study are reliable and novel. All the conclusions made are well supported by the experimental findings. The portion of speculative interpretation of the results is minimized.

Together with theoretical importance the results of this study are very important for a correct interpretation of retention data collected in HPLC.

All **Conclusions** made in the study are succinct and as already mentioned above, well supported by the experimental results.

The results were published in 11 journal articles and 5 abstracts in Russian and International journals and conferences, respectively.

There are some minor linguistic incorrectness and typos in the text which definitely do not affect understanding and quality of the present work.

In overall the thesis reports a novel research having high theoretical and practical value, the text is clear and well supported with tables and figures, the conclusions are novel, reliable and logical and the author of the thesis, Derouiche Abdennour, deserves awarding a degree of a Candidate of Science in Scientific Specialty 1.4.2. Analytical Chemistry.

Yours sincerely,

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