**Journal:** Hemijska Industrija

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**Title:** "Optimization of injected Radiotracer volume for Flow rate measurement in closed conduits"

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**Reply to Reviewers comments:**

We would like to thank the Reviewers for the valuable comments and suggestions. We have accepted almost all the suggestions (different Reviewers have different suggestions for the same issue) and we believe that we have answered all the questions. Please find the detailed answers and the revised manuscript in which all changes are marked in yellow.

We hope that the manuscript is now improved and acceptable for publication in the Hemijska Industrija.

**Answers to Reviewer A comments:**

*Lines 28-29 – cross out: In this work, the application of radiotracer method for RTD measurement in flow meter calibration for chemical industry is described.*

*Line 67 – cross out: Moreover, this approach is used in evaluating and calibrating reactor, pipe or flow meter equipment.*

* We are very grateful to the Reviewer A for the suggestions. The Authors have removed the sentences.

*Line 89 – cross out: In this work the application of radiotracer method for RTD was used to calibrate a flow meter*

* Thanks for remark. However, the Authors think that the aim of the work should be clearly stated, hence the statement was left standing.

*Line 108 -109: The sentence is not correct:*

*“Since it is advised the detectors to be placed at 50–100 diameters of pipe away from the inlet [11], the three detectors at the outlet were 50, 70 and 100 pipe diameters aside. One pipe diameter equals to 1 cm in this case.”*

*This sentence should be modified:*

*“In order to allow tracer to be homogenized in all cross section of the pipe, the injection point should be nearly 100 diameters before the first detection point, that converted to distance was nearly 100 cm in the laboratory setup (pipe diameter 1 cm).*

* The authors thank the Reviewer A for the valuable suggestion. The sentence is changed accordingly.

*Three detection probes where placed 2 m, 7 m and 10 m respectively from the injection point. In fact, two first detectors are enough for flow rate measurement using the transit time method, the third detector was placed for comparative and better statistics of the value.”*

*Thus Fig. 2 caption has to be modified:*

*Figure 2. RTD experimental curves recorded by detectors placed at radiotracers inlet and at 2m, 7 m and 10 m from the injection point for 99mTc volume of 0.7 mL and activity of 1.58 mCi.*

* We are very grateful for the suggestion. The authors have changed caption as stated.

*Line 133,145, 167, 172. 99Mo/99mTc. should be superscripted*

* The authors apologize for the *lapsus scribe.* We have made the changes in the text as requested.

*Line 162. Instead of: “RTD software developed at CEA Saclay” it should be: “IAEA RTD software”.*

* The authors have made the requested changes throughout the text.

**Answers to Reviewer B comments:**

*The objective of the study should be well stated clearly in the introduction.*

* The authors thank Reviewer for valuable comment. We hope that we clearly stated the objective in the introduction, now.

*The results and discussion section should be re-organised, relocating aspects describing the experiment to the experimental.*

* The parts of the manuscript have been relocated and the whole manuscript is reorganized now, according to Reviewer’s suggestion, and we gratefully thank the Reviewer for the suggestions.

*The title should also be modified slightly to reflect the work done, I suggest: Optimization of injected Radiotracer volume for Flow rate measurement in closed conduits*

* Out of two suggestions, the authors have chosen this one. We thank the reviewer for helping us make the manuscript better and more influential.

*Some parts of the experimental section lack references and should be provided.*

* The authors apologize for the omitted references. We have added the references to the statements, and added to the reference list.

*The abstract should be reviewed accordingly stating key results*

* The Abstract is reviewed and rewritten according to key results. We thank the Reviewer for this valuable suggestion.

**Answers to Reviewer B comments:**

*To center title of the Figures*

* We thank the Reviewer for the suggestion. However, the Template states that the Figure captions should be left aligned, so we left it as is.

Yours sincerely,

dr Miroslav Pavlović