

Interactive comment on “Effect of biostimulation on biodegradation of dissolved organic carbon in biological granular activated carbon filters” by K. Tihomirova et al.

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Received and published: 25 April 2012

General comments:

I read the discussion paper with great interest. The research is original and the topic is relevant for Drinking Water Engineering and Science. The paper is very compact and not much experimental information was provided. I advice the authors to extend the paper, provide more data and work out the questions that were raised by the different referees. The paper is written in understandable English, though I recommend to have it checked by a native speaker.

Specific comments:

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The title is not correct, the biostimulation was not in biological granular activated carbon filters, but in glass beads biofilters (which were feed with effluent from biological granular activated carbon filters).

Page 71, lines 7-9: how was the figure of 5.23×10^{11} recalculated? Can you provide a reference?

Page 71, line 18: what was the power input and the frequency during sonification?

Page 72, lines 17-20: you use an own definition of BDOC. Please put it in perspective of other definitions for BDOC from literature.

Page 74, lines 17-21: can you show the increased cell concentration in the effluent and correlate it with the ATP concentrations in the biofilter?

Page 74, lines 17-18: can you explain in more detail why the biodegradation only was stimulated temporary?

Page 74, line 22 – page 75, line 6: in your experiments you can not be sure that the remaining DOC after 272 minutes of contact time was not biodegradable. Can you give an indication of the biodegradability of the original DOC and the remaining DOC, for example by AOC measurements?

Page 74, line 22 – page 75, line 6: did you check other water quality parameters involved in biodegradation, like oxygen consumption, CO₂-production, AOC, ATP/cells released in the effluent? If so, please provide the information and discuss the results.

Page 80, table 1: can you recalculated the ATP concentrations in the sample volume to the filter volume and compare it with literature values?

Page 80, table 1: can you show all measured BDOC and ATP concentrations at EBCTs of 272 minutes in a graph?

Page 82, figure 2: from which day are these results, or over which days are these the DOC averages?

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Technical corrections and additions:

Page 69, lines 20 and 24: describe the meaning of " γ ".

Page 70, line 15: describe the meaning of "CV".

Page 72, lines 17-26: this section should be in the section "Materials and methods, 2.6 Calculations".

Page 73, line 25 – page 74, line 6: this section should be in the section "Materials and methods", maybe in 2.4 or in a new subparagraph "raw water".

Interactive comment on Drink. Water Eng. Sci. Discuss., 5, 67, 2012.