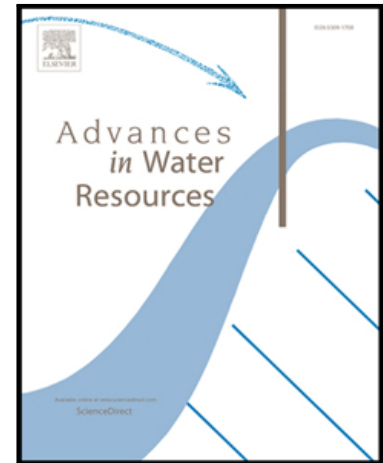


## Accepted Manuscript

Biofilm growth in porous media: experiments, computational modeling at the porescale, and upscaling

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PII: S0309-1708(15)00155-4  
DOI: [10.1016/j.advwatres.2015.07.008](https://doi.org/10.1016/j.advwatres.2015.07.008)  
Reference: ADWR 2420



To appear in: *Advances in Water Resources*

Received date: 20 February 2015  
Revised date: 8 July 2015  
Accepted date: 9 July 2015

Please cite this article as: Malgorzata Peszynska, Anna Trykozko, Gabriel Iltis, Steffen Schlueter, Dorthe Wildenschild, Biofilm growth in porous media: experiments, computational modeling at the porescale, and upscaling, *Advances in Water Resources* (2015), doi: [10.1016/j.advwatres.2015.07.008](https://doi.org/10.1016/j.advwatres.2015.07.008)

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## 1 **Highlights**

- 2     • We use 3D imaging with a barium-based contrasting agent to obtain  
3       porescale geometries filled with biofilm
- 4     • We simulate the flow in the porescale geometries with and without  
5       biofilm, and upscale the results to the conductivities which compare  
6     • well with the experimental values, and which show the dependence of  
7       the degree of bioclogging on the flow rates
- 8     • We simulate biomass growth and transport coupled to the flow and  
9       obtain morphologies similar to those in the experiment
- 10    • We show several reduced models for conductivities and their depen-  
11      dence on the biofilm growth

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