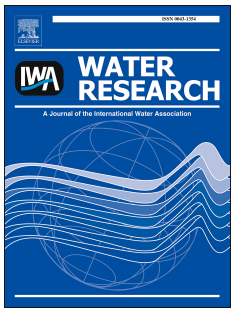
Accepted Manuscript



Linking composition of extracellular polymeric substances (EPS) to the physical structure and hydraulic resistance of membrane biofilms

Peter Desmond, James P. Best, Eberhard Morgenroth, Nicolas Derlon

PII: S0043-1354(17)31053-9

DOI: 10.1016/j.watres.2017.12.058

Reference: WR 13456

To appear in: *Water Research*

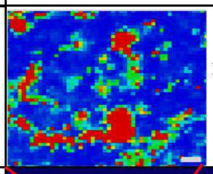
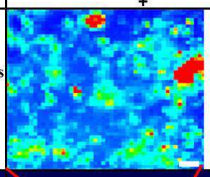
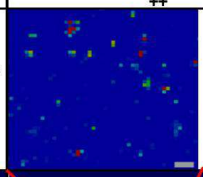
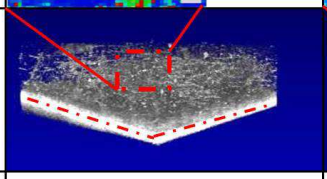
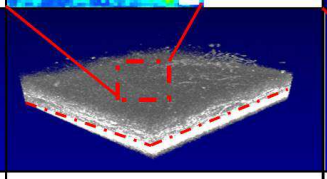
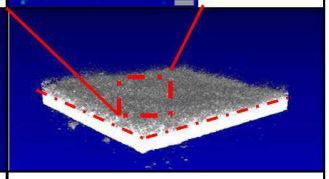
Received Date: 15 September 2017

Revised Date: 22 December 2017

Accepted Date: 22 December 2017

Please cite this article as: Desmond, P., Best, J.P., Morgenroth, E., Derlon, N., Linking composition of extracellular polymeric substances (EPS) to the physical structure and hydraulic resistance of membrane biofilms, *Water Research* (2018), doi: 10.1016/j.watres.2017.12.058.

Graphical Abstract

Nutrient condition	Nutrient enriched	P limiting	N limiting
Chemical composition Polysaccharide eDNA Protein	 + + ++++	 ++++ ++++ +	 + + ++
Functional group distribution	 **Heterogeneous distribution**	 **Homogeneous distribution**	 **Heterogeneous distribution**
Mesoscale physical structure			
Hydraulic resistance	++	++++	+