

# Appendix B. Supplemental material

## Fluorescence based, quasi-continuous and *in situ* monitoring of biofilm formation dynamics in natural marine environments

M. Fischer<sup>a,b\*</sup>, G. Friedrichs<sup>c</sup> and T. Lachnit<sup>d</sup>

<sup>a</sup> GEOMAR — Helmholtz Centre for Ocean Research Kiel, Kiel, Germany

<sup>b</sup> University of York, York, United Kingdom

<sup>c</sup> Institute of Physical Chemistry & KMS Kiel Marine Science - Centre for Interdisciplinary Marine Science, Christian-Albrechts-University Kiel, Kiel, Germany

<sup>d</sup> Centre for Marine Bio-Innovation, The University of New South Wales, Sydney, NSW, Australia

\* To whom correspondence should be addressed.

E-mail address: matthias.fischer@york.ac.uk

**Table 1.1:** Overview of physico-chemical and biological parameters (maximum and minimum values (Max.; Min.)) of marine waters and summarized results ( $\pm$ SE) of biofilm dynamics during the experimental periods. Nutrients and chlorophyll *a* data is courtesy of A. Stuhr, GEOMAR, Kiel, Germany.

Season	10/2010	5/2011	11/2011
Exp. duration [d]	20	21	18
Temperature [ $^{\circ}$ C]	13.9 (16.6; 11.9)	12.7 (16.4; 9.5)	9.8 (12.0; 7.9)
Salinity [mS]	28.5 (31.2; 23.1)	26.3 (29.5; 20.2)	30.2 (33.1; 25.8)
O <sub>2</sub> [mg/l]	5.9 (8.1; 4.8)	5.6 (7.8; 5.0)	5.9 (6.5; 4.9)
pH	7.4 (7.8; 7.3)	8.1 (8.3; 7.8)	7.7 (8.1; 7.5)
Silicate [ $\mu$ M/l]	26.3 (44.9; 12.7)	9.9 (14.5; 5.8)	36.3 (40.8; 35.7)
Phosphate [ $\mu$ M/l]	0.7 (1.2; 0.5)	0.3 (0.4; 0.2)	1.9 (2.2; 1.6)
Nitrate [ $\mu$ M/l]	0.3 (0.9; 0)	0.1 (0.2; 0)	4.5 (5.1; 4.0)
Chlorophyll <i>a</i> [ $\mu$ g/l]	3.6 (5.2; 1.6)	4.2 (6.8; 3.0)	2.3 (3.0; 1.1)
Growth rate [d <sup>-1</sup> ]	0.3	0.4	0.2
Total cell density [counts/cm <sup>2</sup> ]	$(1.6 \pm 0.2) \times 10^6$	$(4.7 \pm 0.4) \times 10^6$	$(2.7 \pm 0.2) \times 10^6$
Average cell size [ $\mu$ m]	$3.9 \pm 0.8$	$5.0 \pm 0.8$	$1.5 \pm 0.2$
Red fluorescent cells [cells/cm <sup>2</sup> ]	$(8.1 \pm 1) \times 10^4$	$(1.4 \pm 0.2) \times 10^5$	$(3.6 \pm 1) \times 10^4$
Covered area [%]	$33.7 \pm 2.9$	$41.6 \pm 4.3$	$5.7 \pm 0.9$