



### Si-C interactions in the diatom frustule

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The objective of the present study is to understand more about the structure of the diatom frustule and about how biogenic silica is involved in the degradation of the diatom carbon, and conversely what the role of organic compounds is in bSiO<sub>2</sub> dissolution. Consequently, we undertook a laboratory experiment in which a monospecific culture of the common diatom *Thalassiosira weissflogii* was incubated in N or Si nutrient stress conditions. Biochemical parameters (proteins, lipids and carbohydrates) and photosynthetic activities were measured throughout the incubation. In parallel, Micro-Fourier transform infrared (FTIR) spectroscopy was used to study changes in macromolecular composition of microalgae cells due to application of nitrate or silicate limitation. This technique also makes it possible to visualize the associations between silica and organic compounds. This study gives a better understanding of the structure of the diatom frustule of *T. weissflogii* and more precisely of the interactions between carbon and silica.