

# Oogsten van algen door middel van flocculatie

*Koenraad Muylaert*

# Oogsten van micro-algen

**Opbrengst**  
**Biomassa**

8 ton ha<sup>-1</sup> jaar<sup>-1</sup>  
8 ton ha<sup>-1</sup>

**Opbrengst**  
**Biomassa**

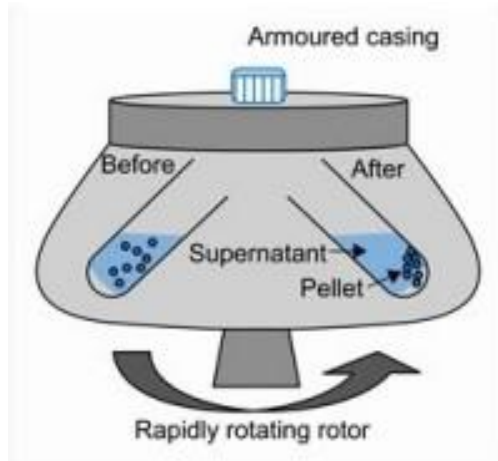
35 ton ha<sup>-1</sup> jaar<sup>-1</sup>  
1 ton ha<sup>-1</sup>



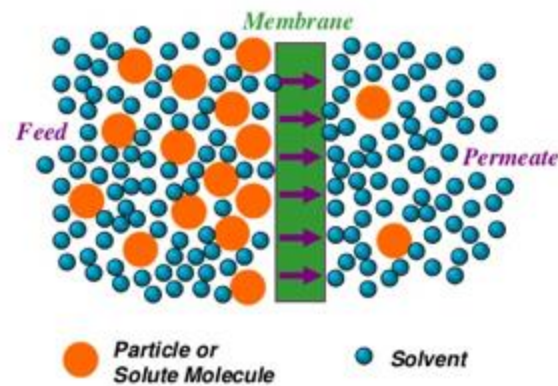
# Oogsten van micro-algen

- kleine afmeting: ongeveer 5  $\mu\text{m}$

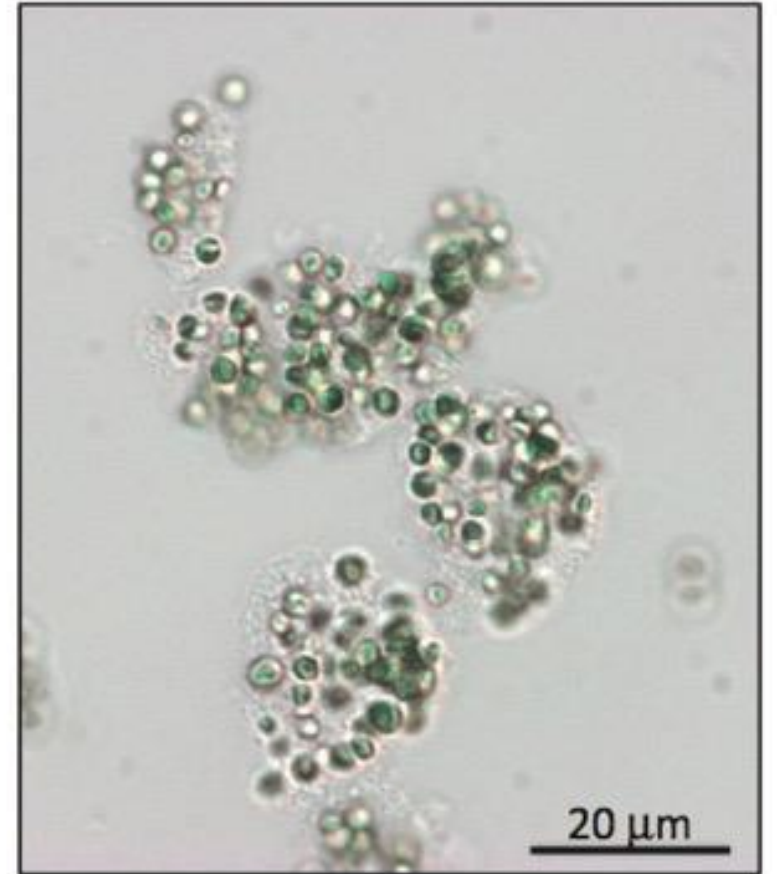
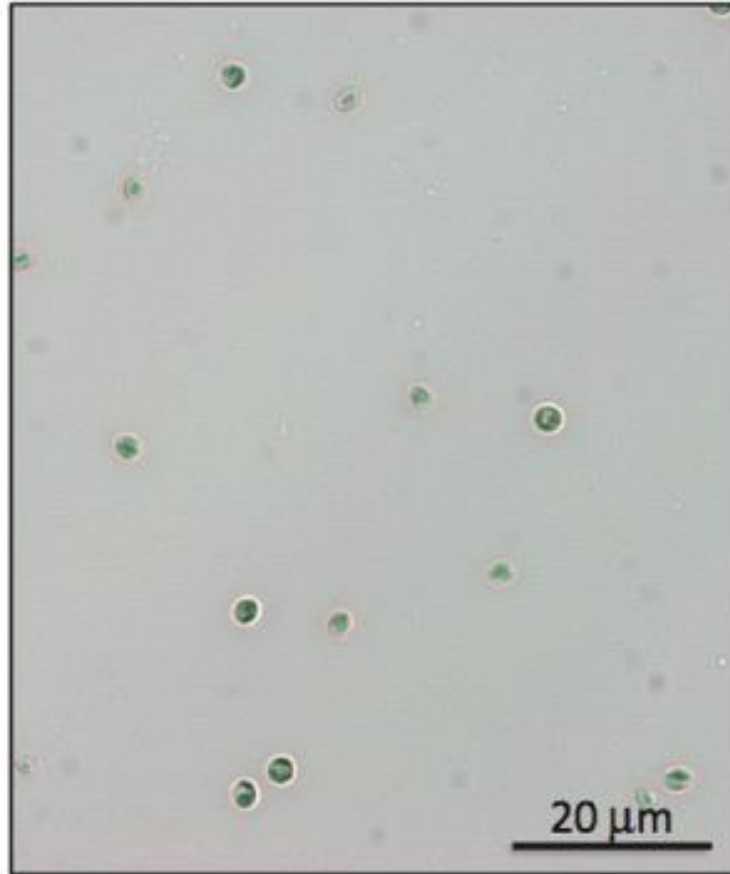
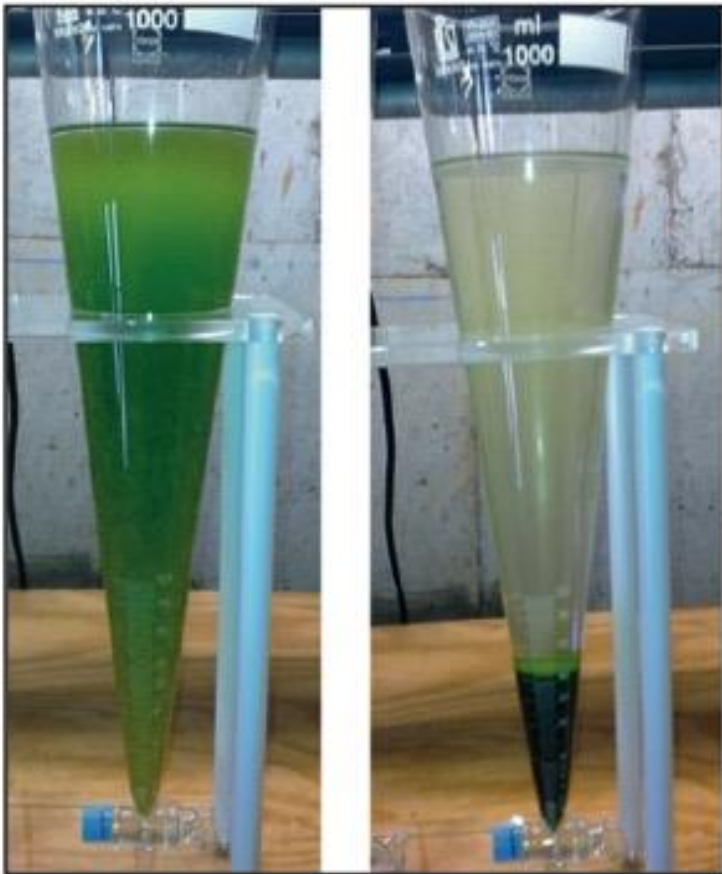
**centrifugatie,  
sedimentatie,  
flotatie**



**membraan-filtratie**



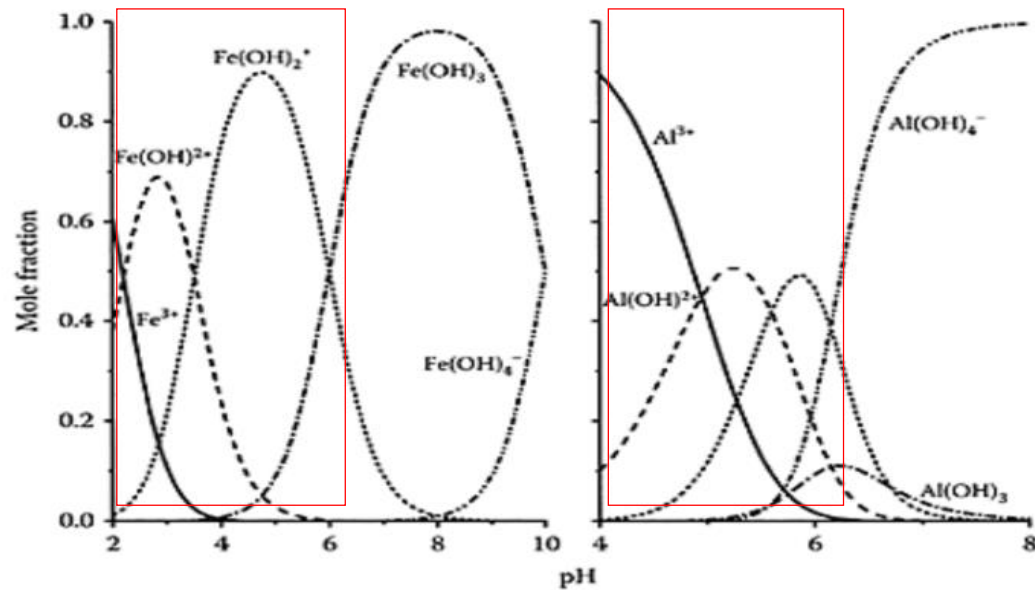
# Grotere partikels door middel van flocculatie



# Flocculatie: methoden

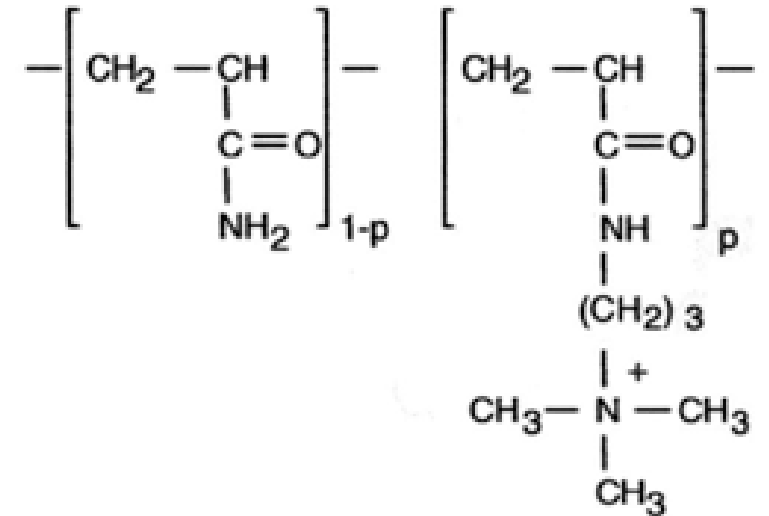
## Metaalzouten

Fe<sup>3+</sup> en Al<sup>3+</sup> hydroxiden

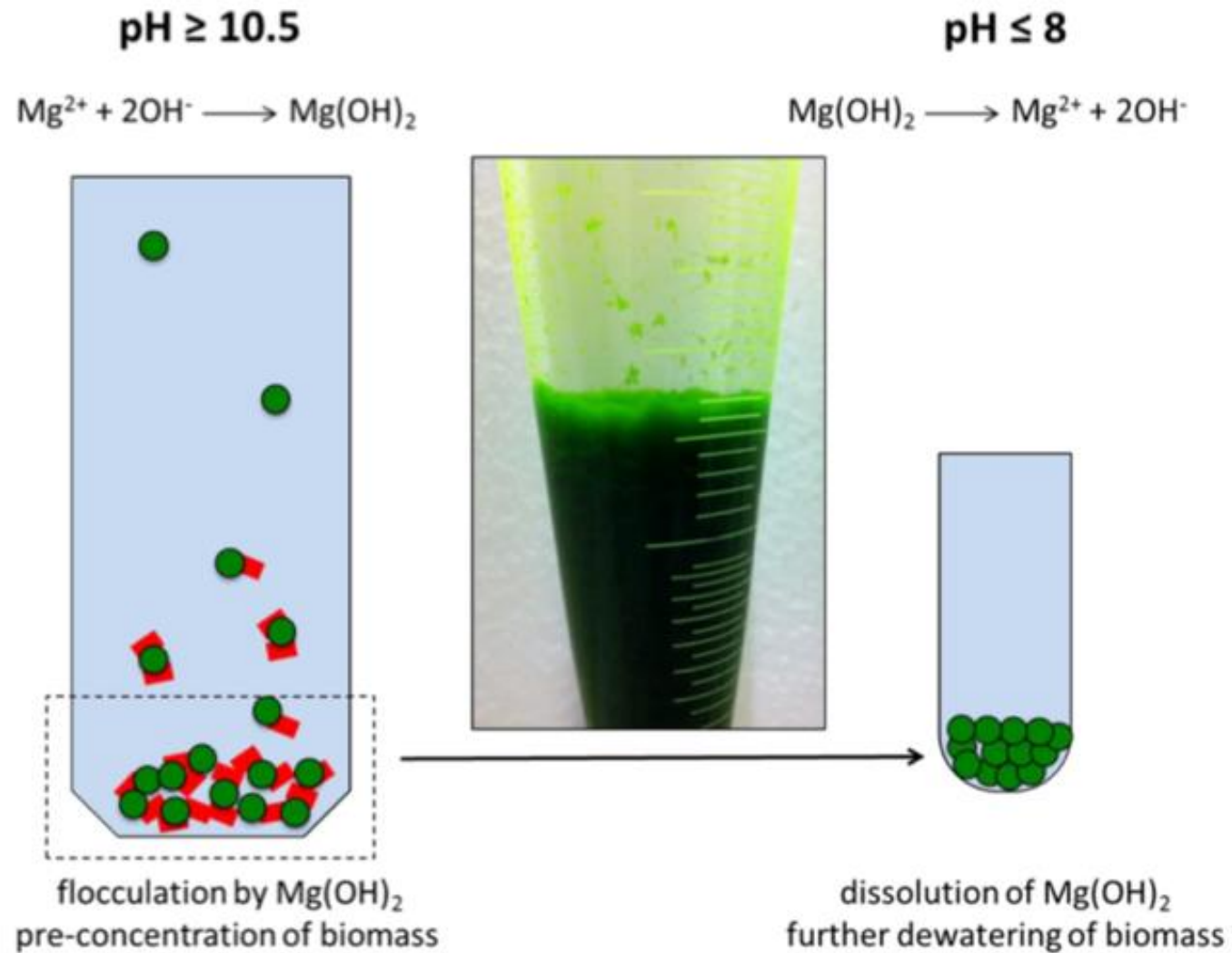


## Synthetische polymeren

Cationisch polyacrylamide

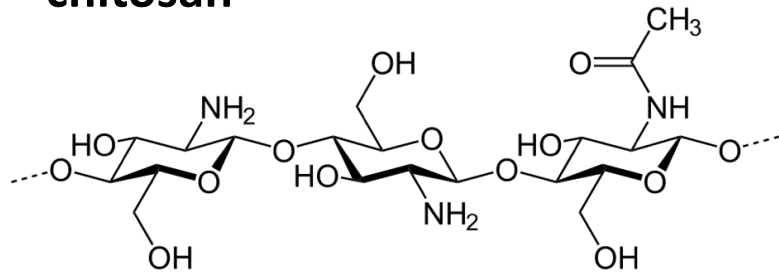


# Flocculatie door pH-wijziging

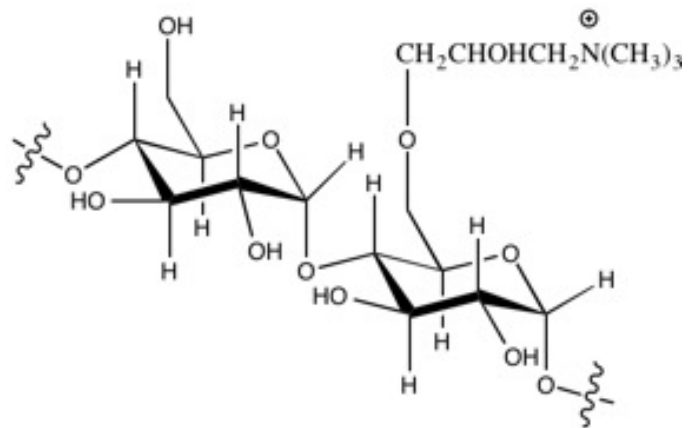


# Bio-gebaseerde polymeren

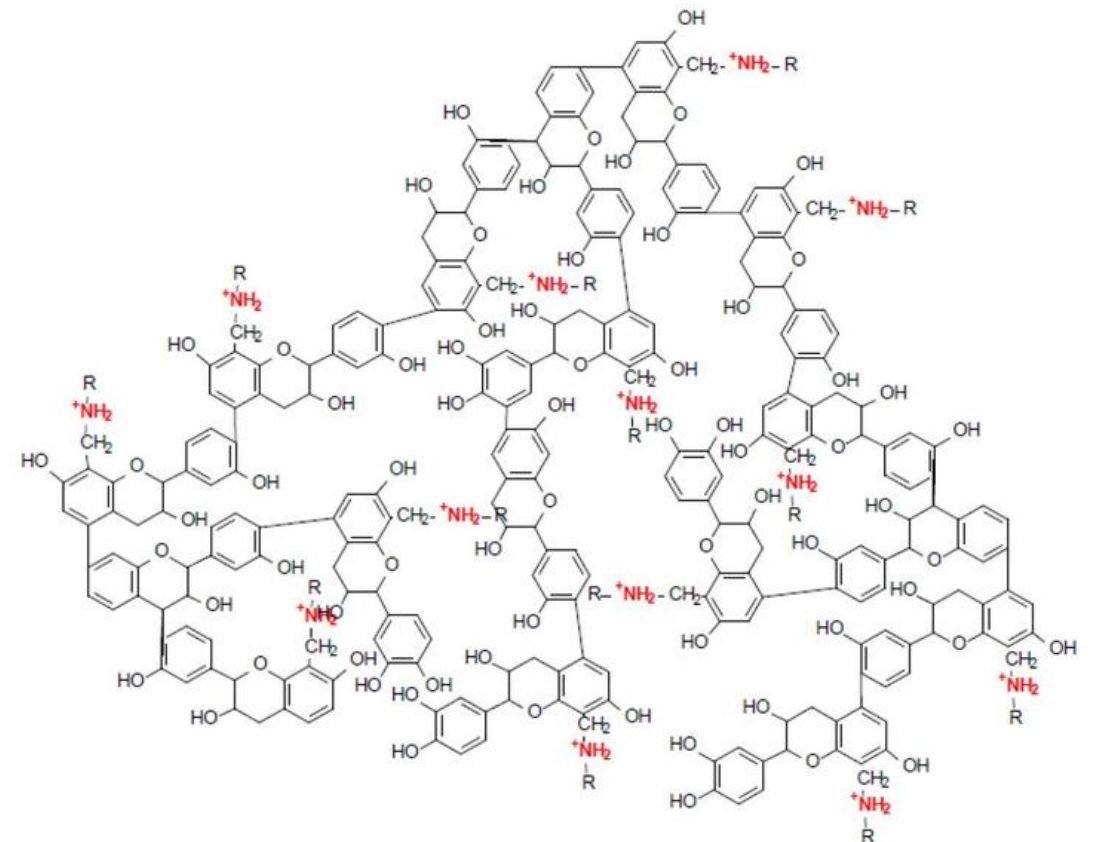
chitosan



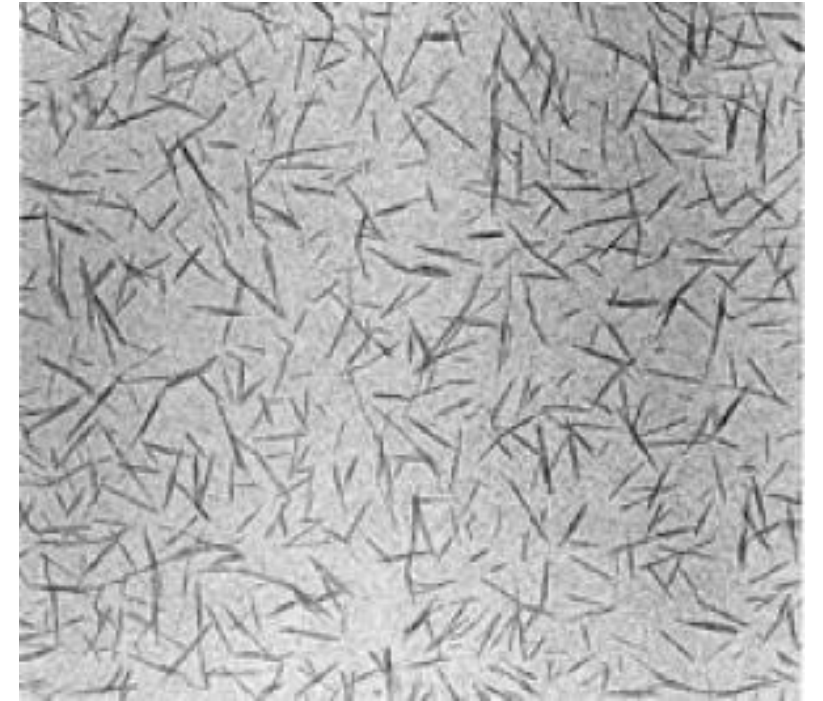
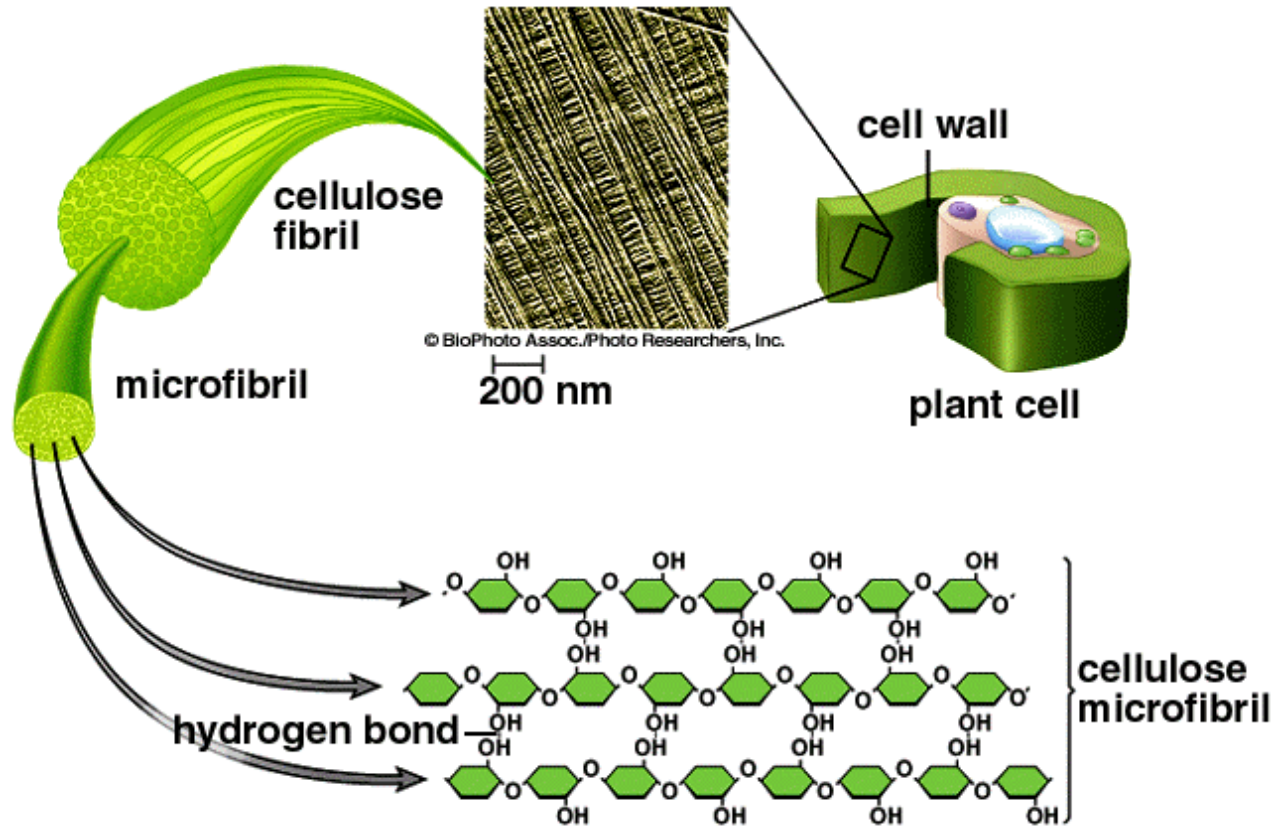
cationisch zetmeel



cationisch tannine



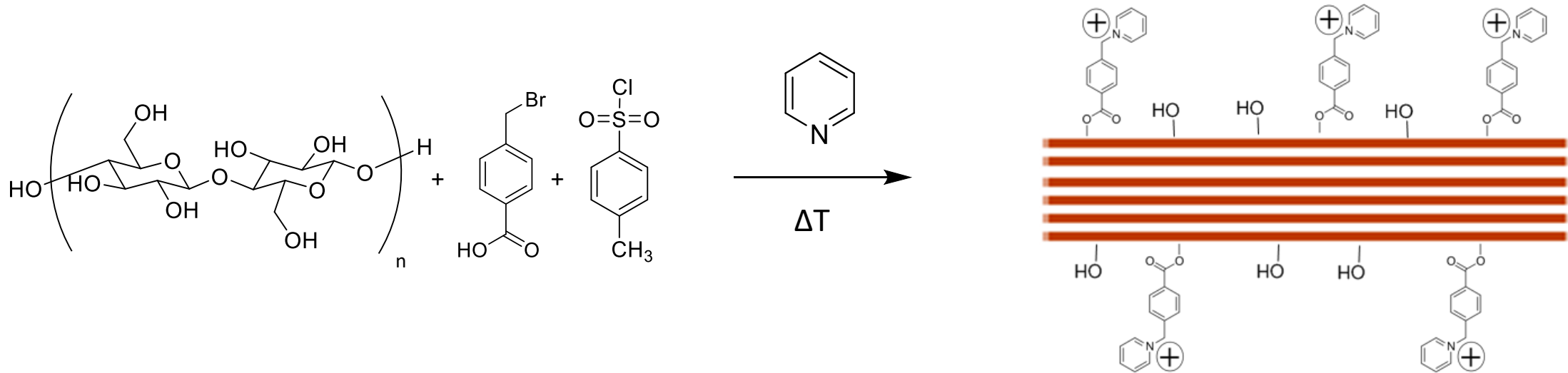
# Cellulose nanocrystals



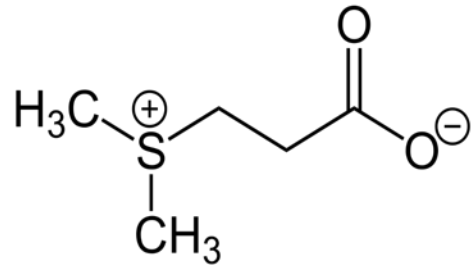


# Cationisch nanocellulose

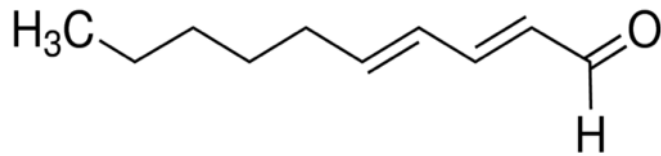
Functionalisatie van nanovezels (flocculatie, reversiebele flocculatie, cel disruptie, magnetoforetsiche scheiding)



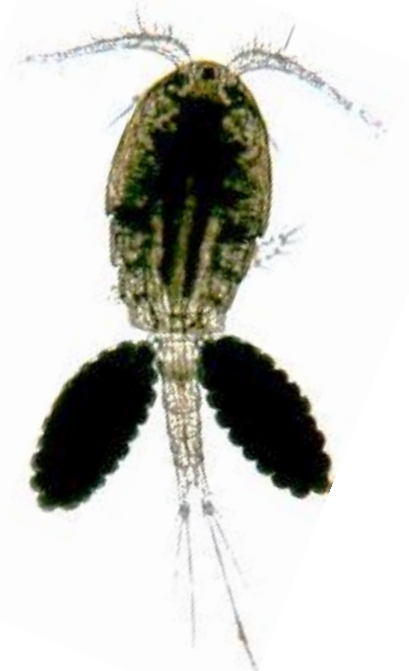
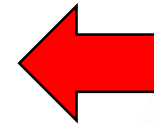
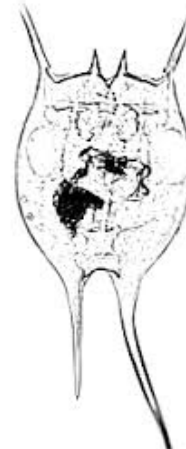
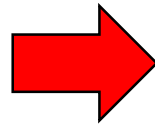
# 'pest control' in culture van micro-algen



**DMSP**



**decadienal**



# Spirulina (*Arthrospira*)

