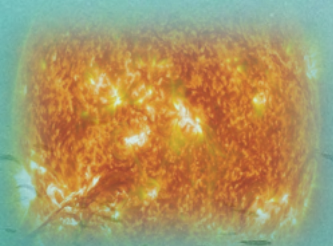
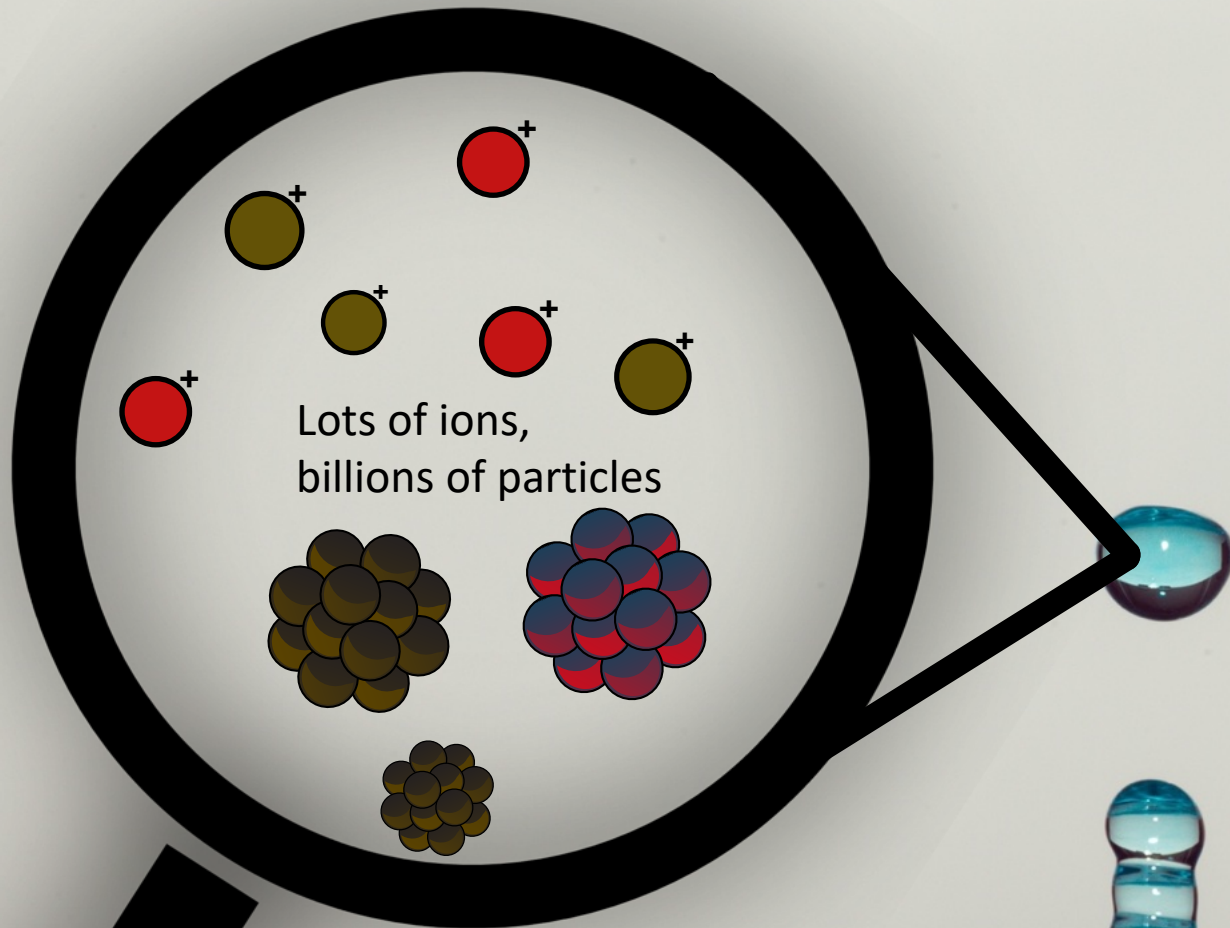


Marine nanoparticles and how to find them





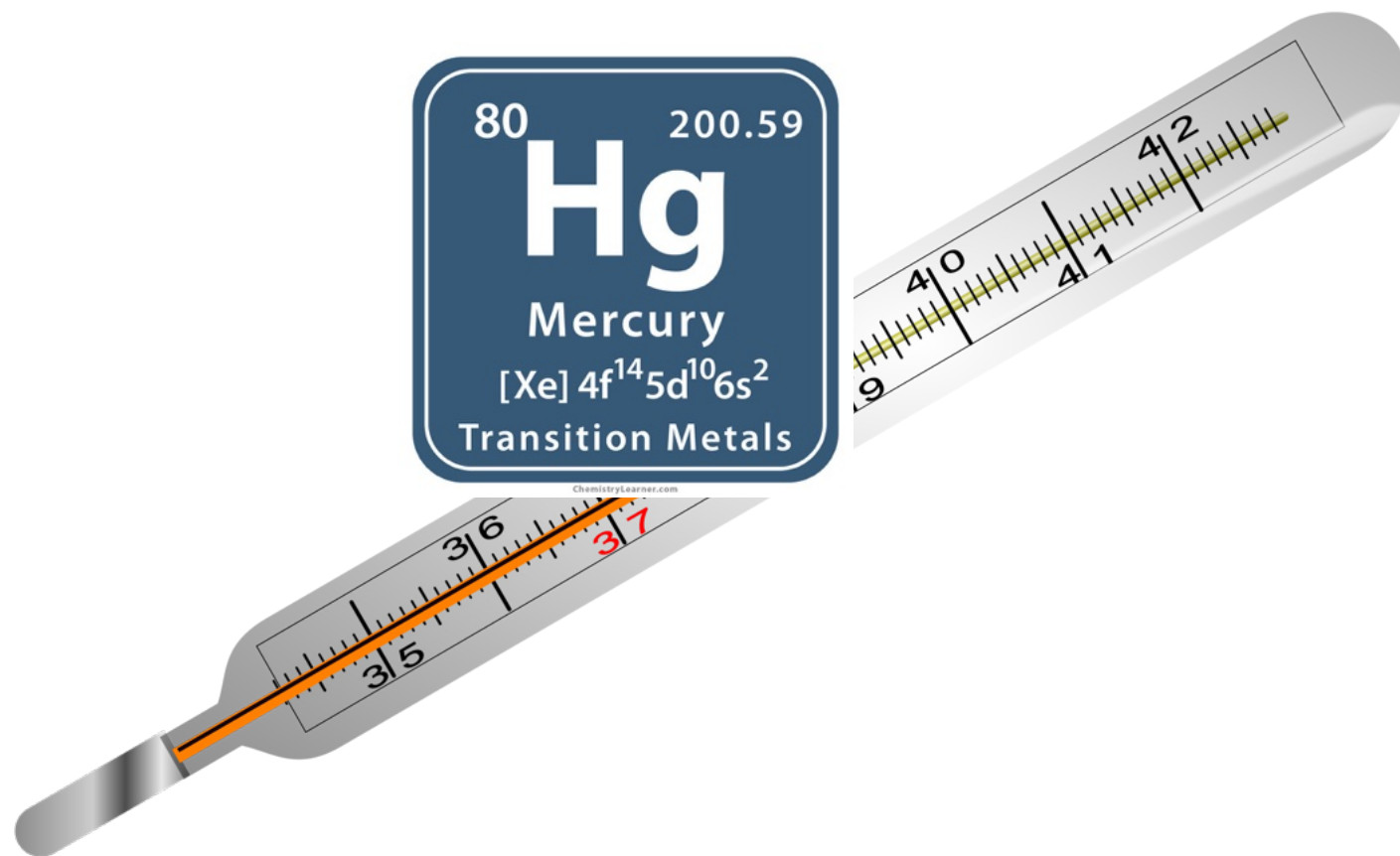
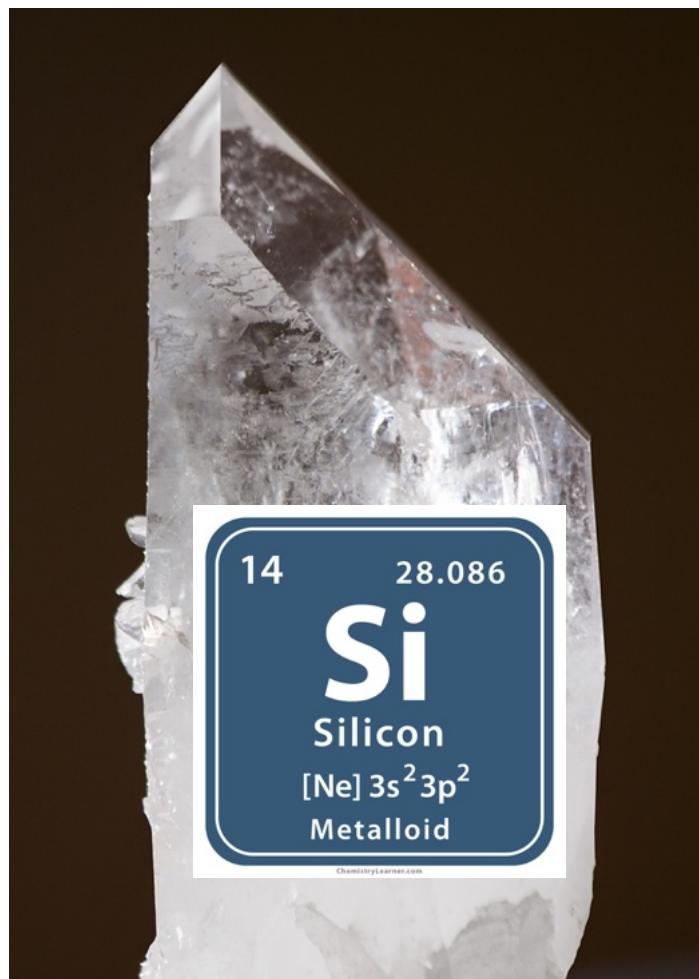
Lots of ions,
billions of particles

X 100 000 000

... but what form?

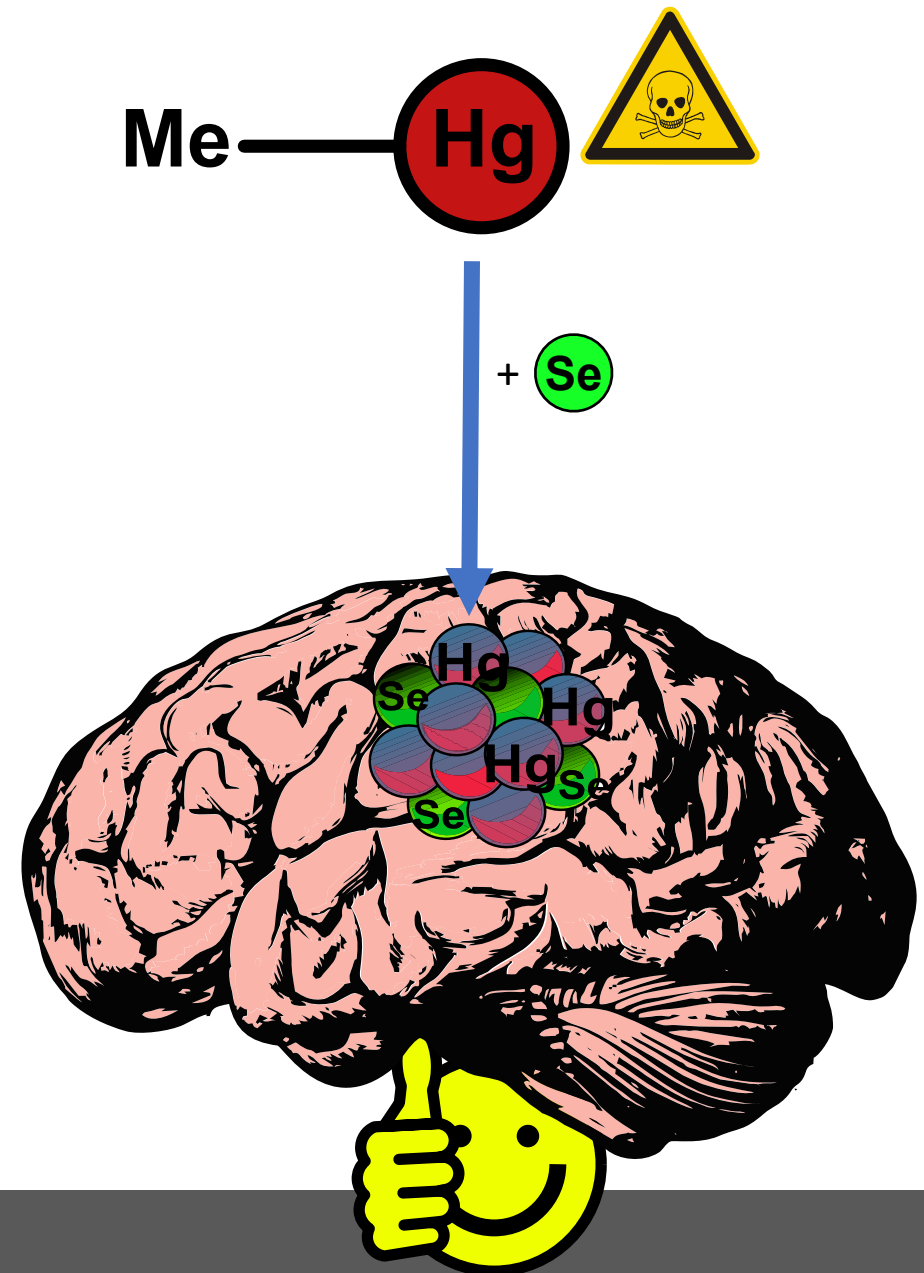


Which would you rather have in your BRAIN?

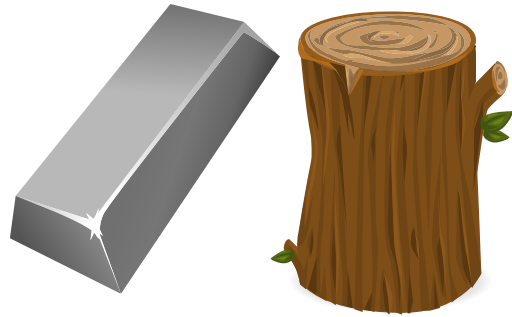




United States Geological Survey CC BY 2, upscaled.



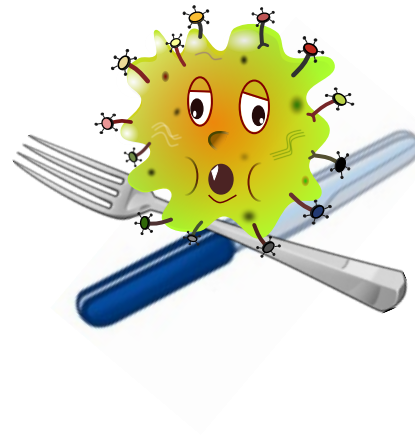
SIZE (AND FORM) MATTERS!



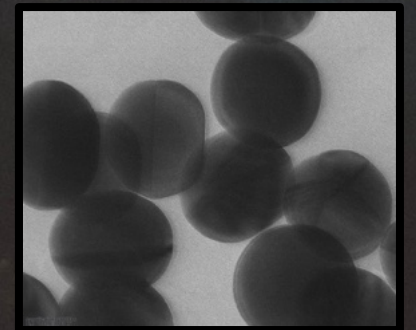
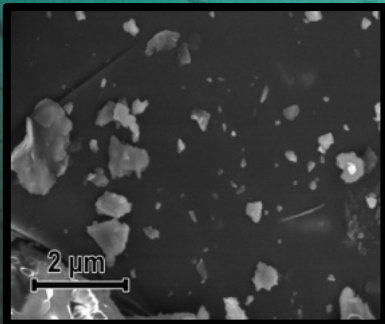
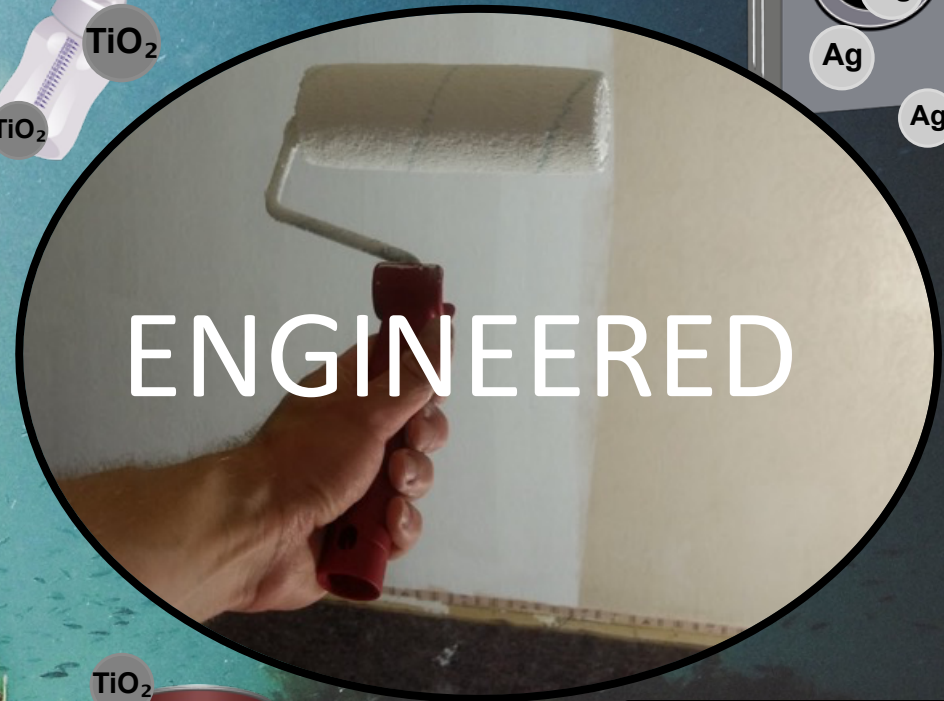
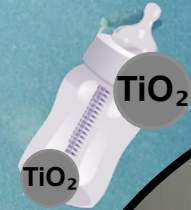
≠



SIZE (AND FORM) MATTERS!



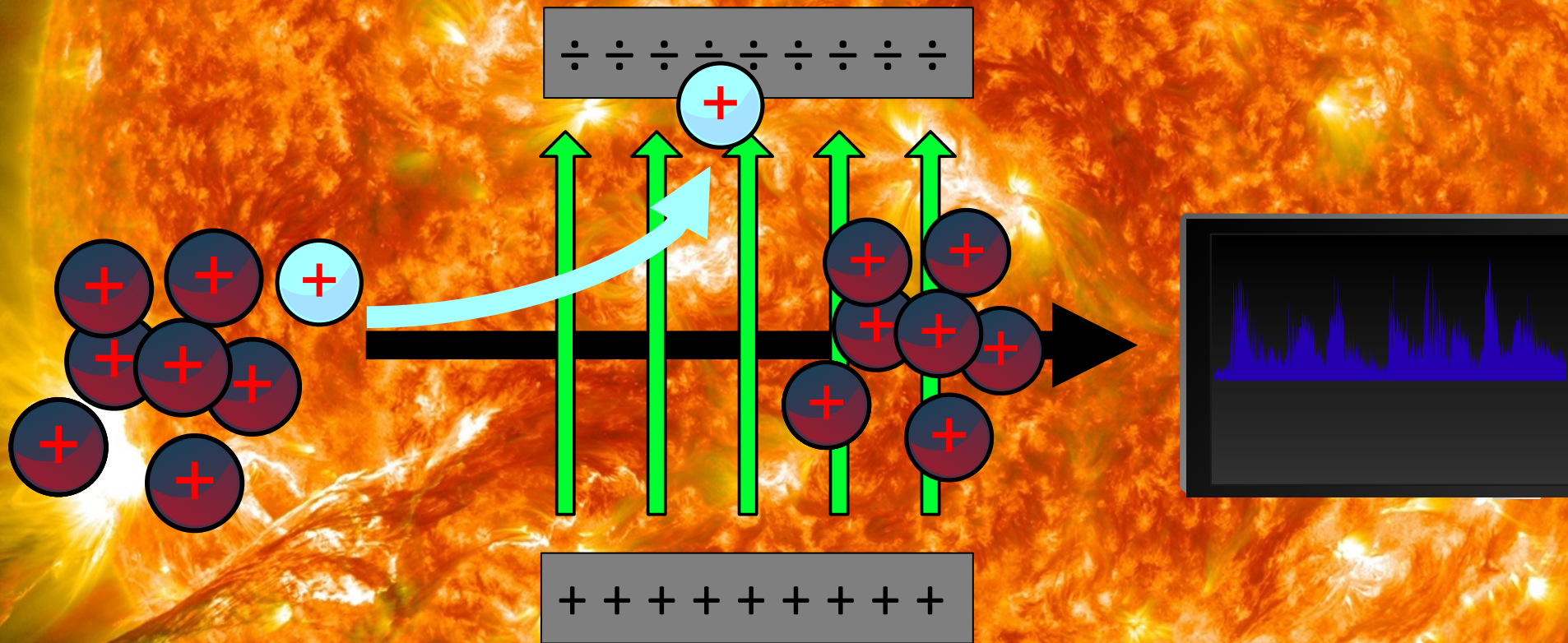
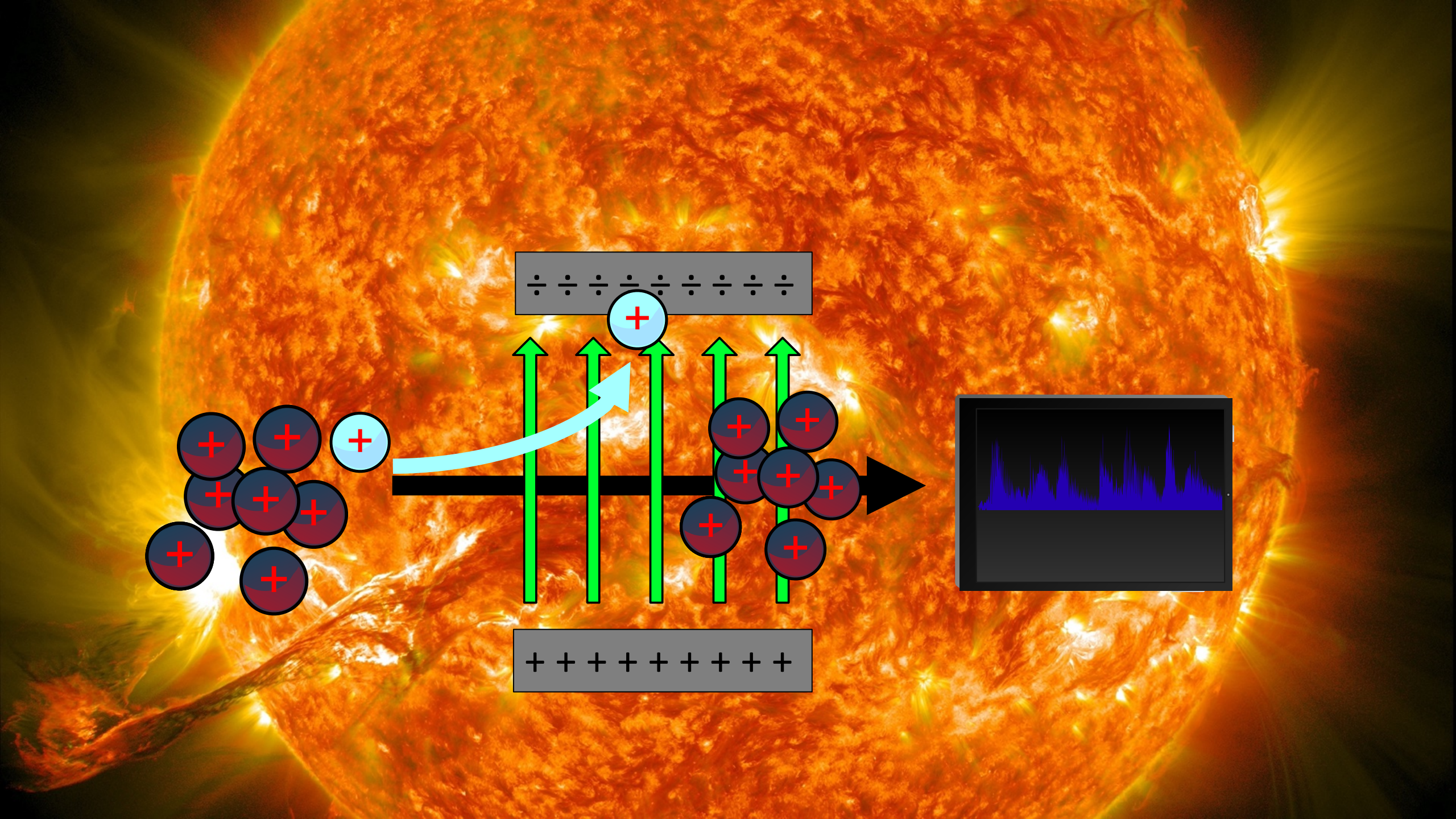
HUMAN MADE NANOPARTICLES

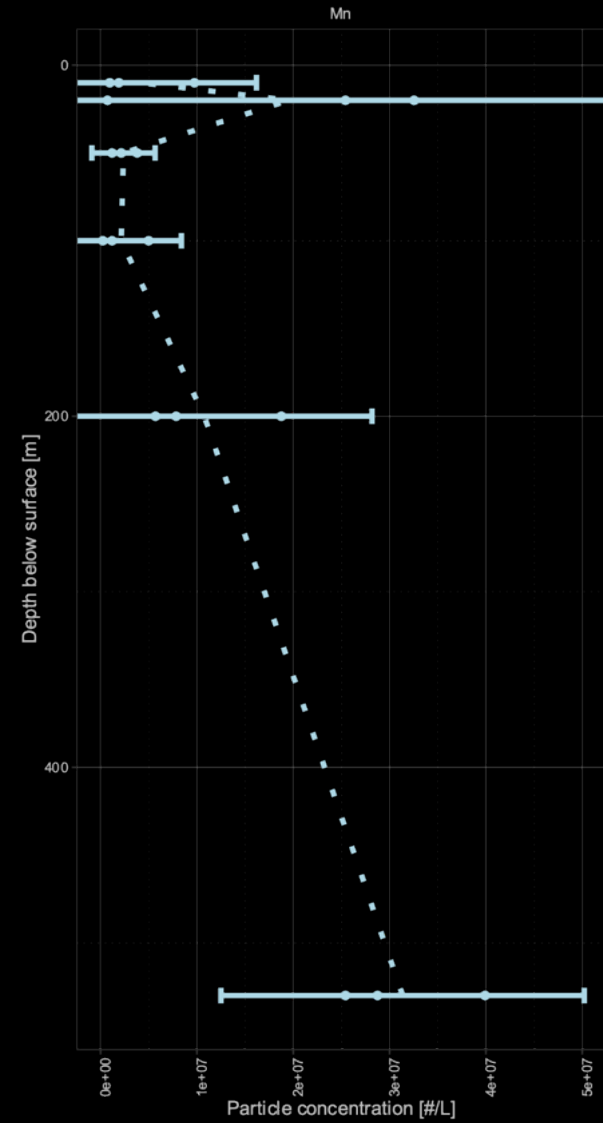
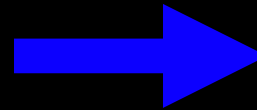
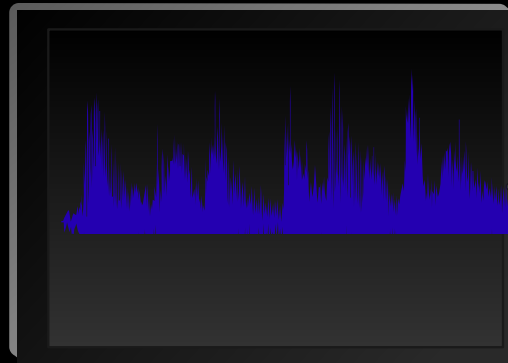
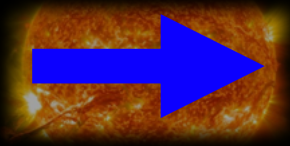
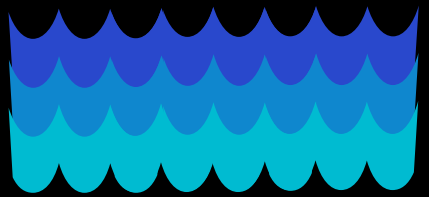




SP-ICP-MS



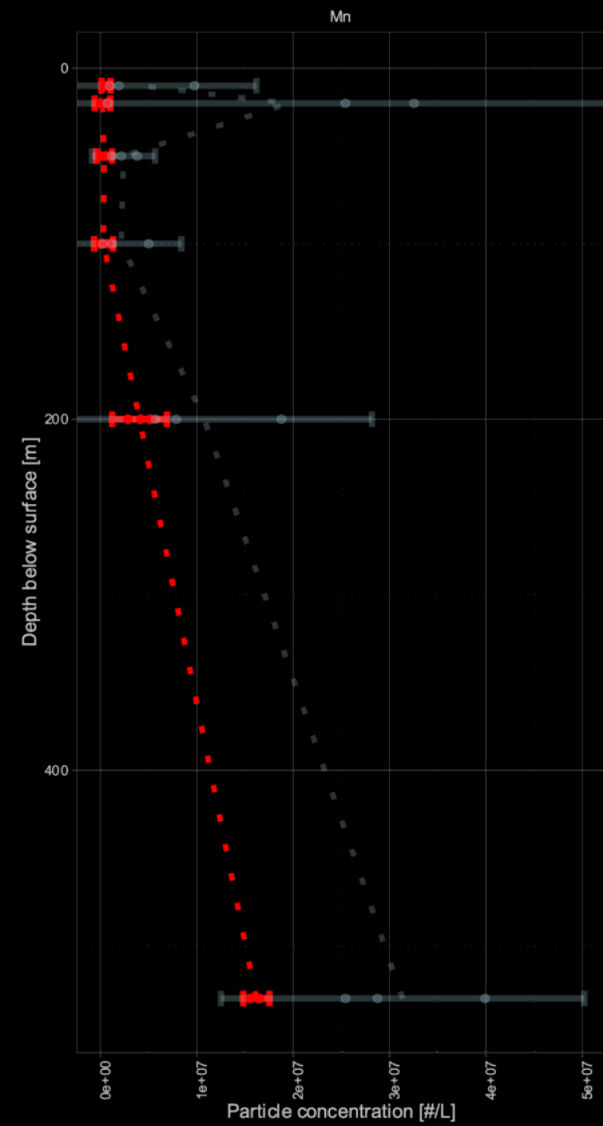


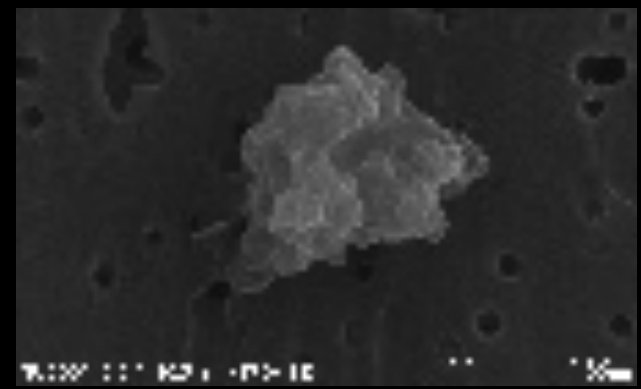


.... between 0 and a lot!

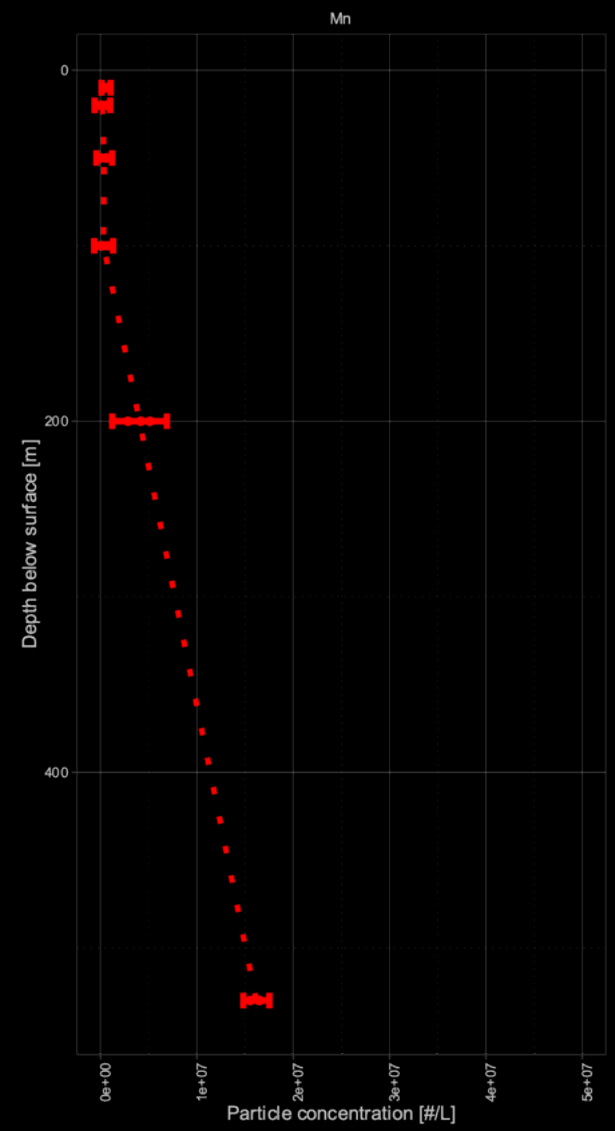
```
mutat... name = head... fo[2],
uset... header info... %>%
str_re... "/" %>%
str_ex... "(?<... ^/]*(?=\V[^\V]*\\.d$)",
atafile... %>%
g re... "/" %>%
... \\d{3}[^\V]*(?=\.[dD]$)",
isotope... names
) %>%
```



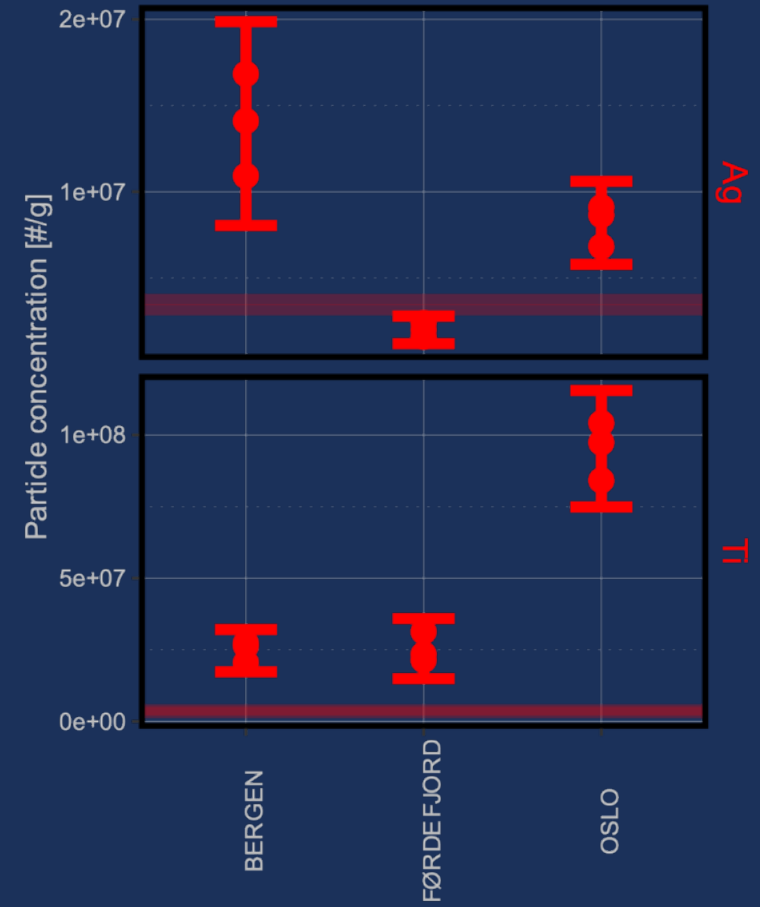


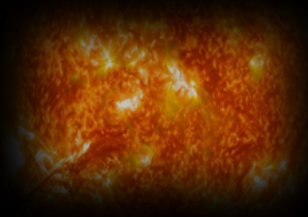
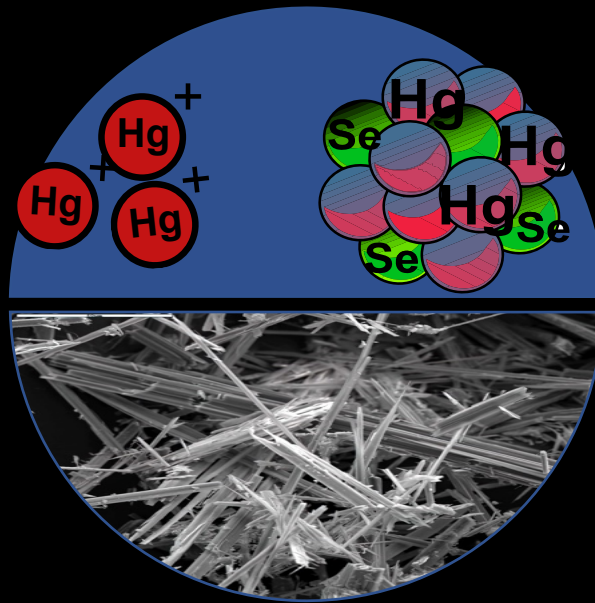


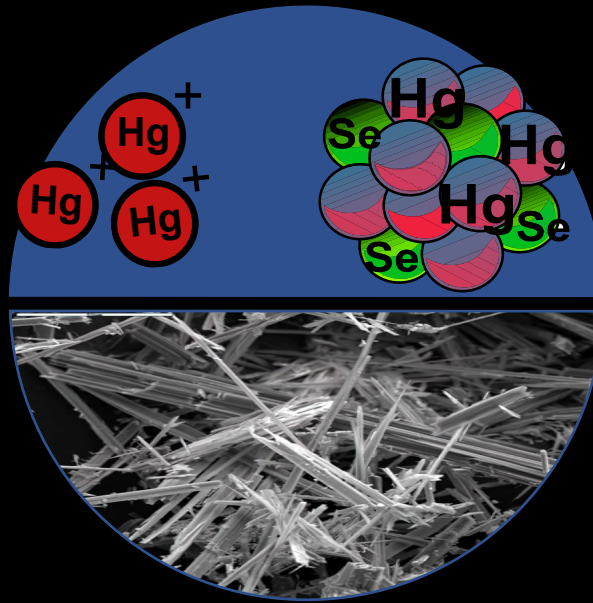
Natural Mn-nanoparticle



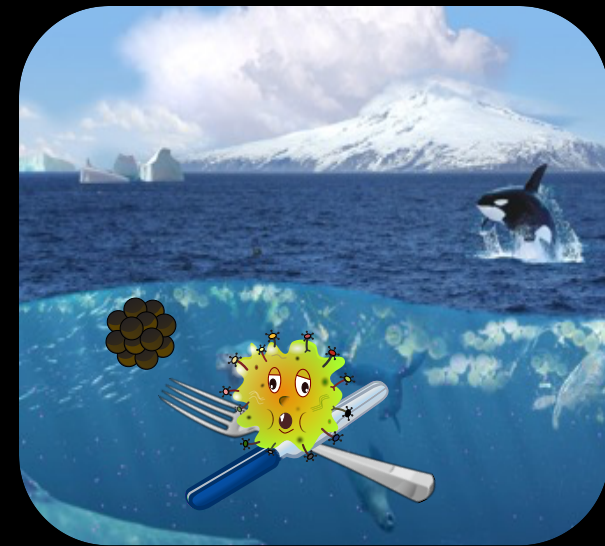








HUMAN IMPACT



NATURAL ENVIRONMENT

Thanks!

DTU



aresb@hi.no
slides: arebruvold.com/research.html