

Transport phenomena

A photograph of a lush rainforest in Costa Rica. The scene is dominated by a thick layer of white mist or fog that rises between the trees, partially obscuring the dense canopy. The trees are tall and have a variety of green shades, from vibrant to dark. The overall atmosphere is serene and mysterious.

Transport phenomena

CO₂
O₂

Transport of matter

fog

water + nutriment

rain

Transport phenomena

Transport of heat



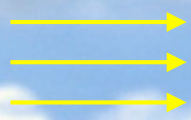
Transport phenomena



Transport of heat

radiation

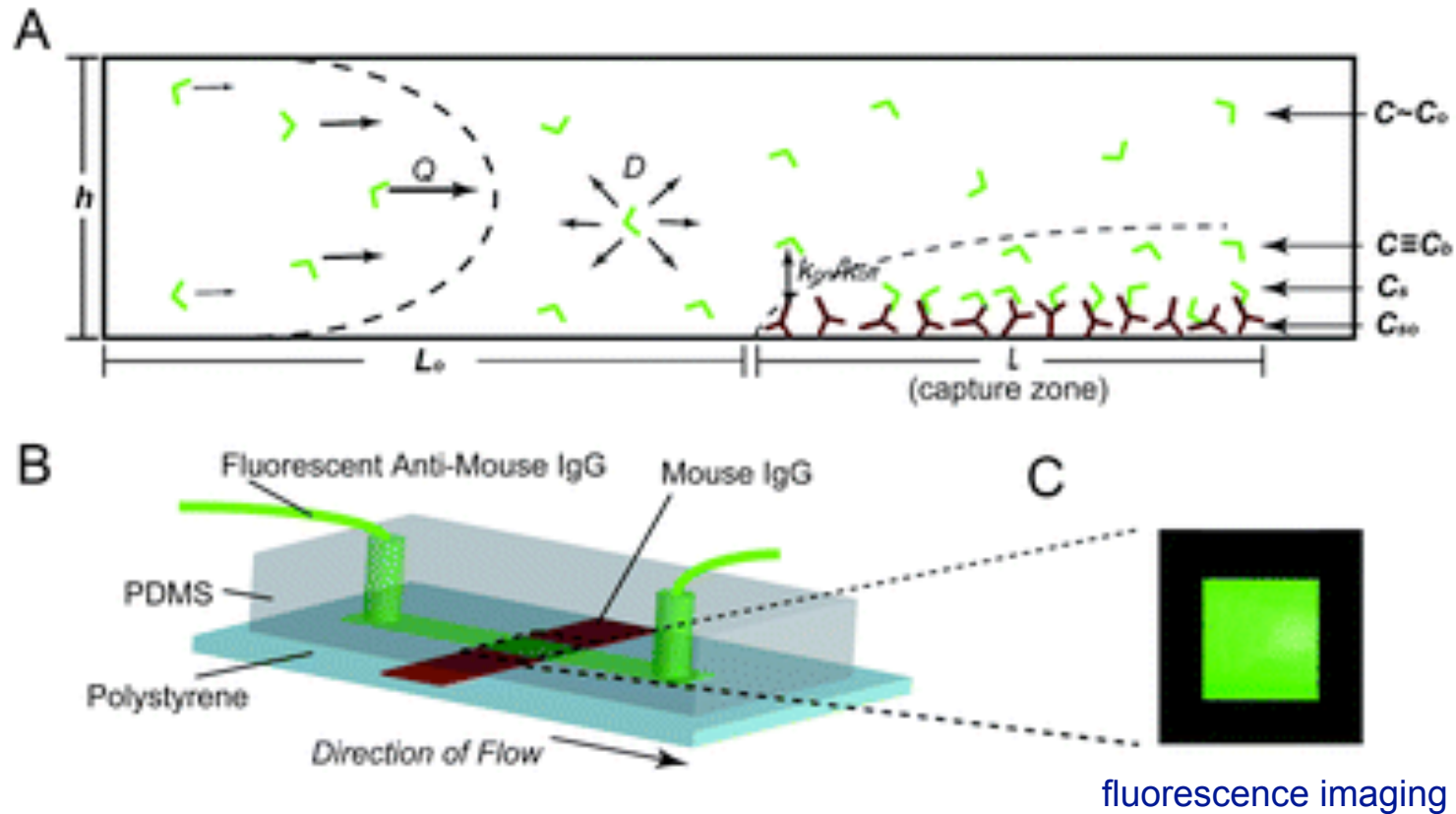
convection



diffusion

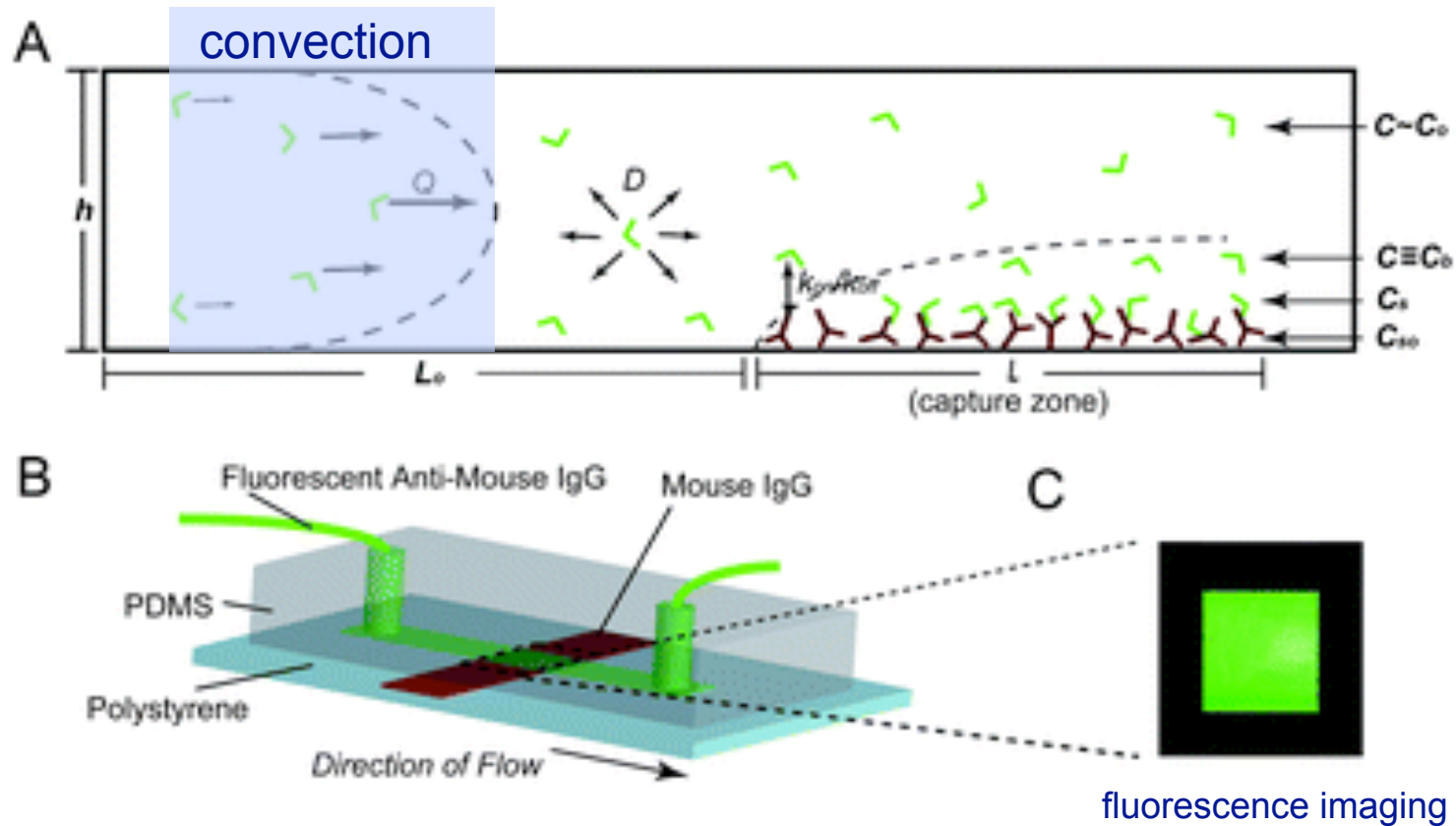


Engineering at small scale : designing a microchip ?



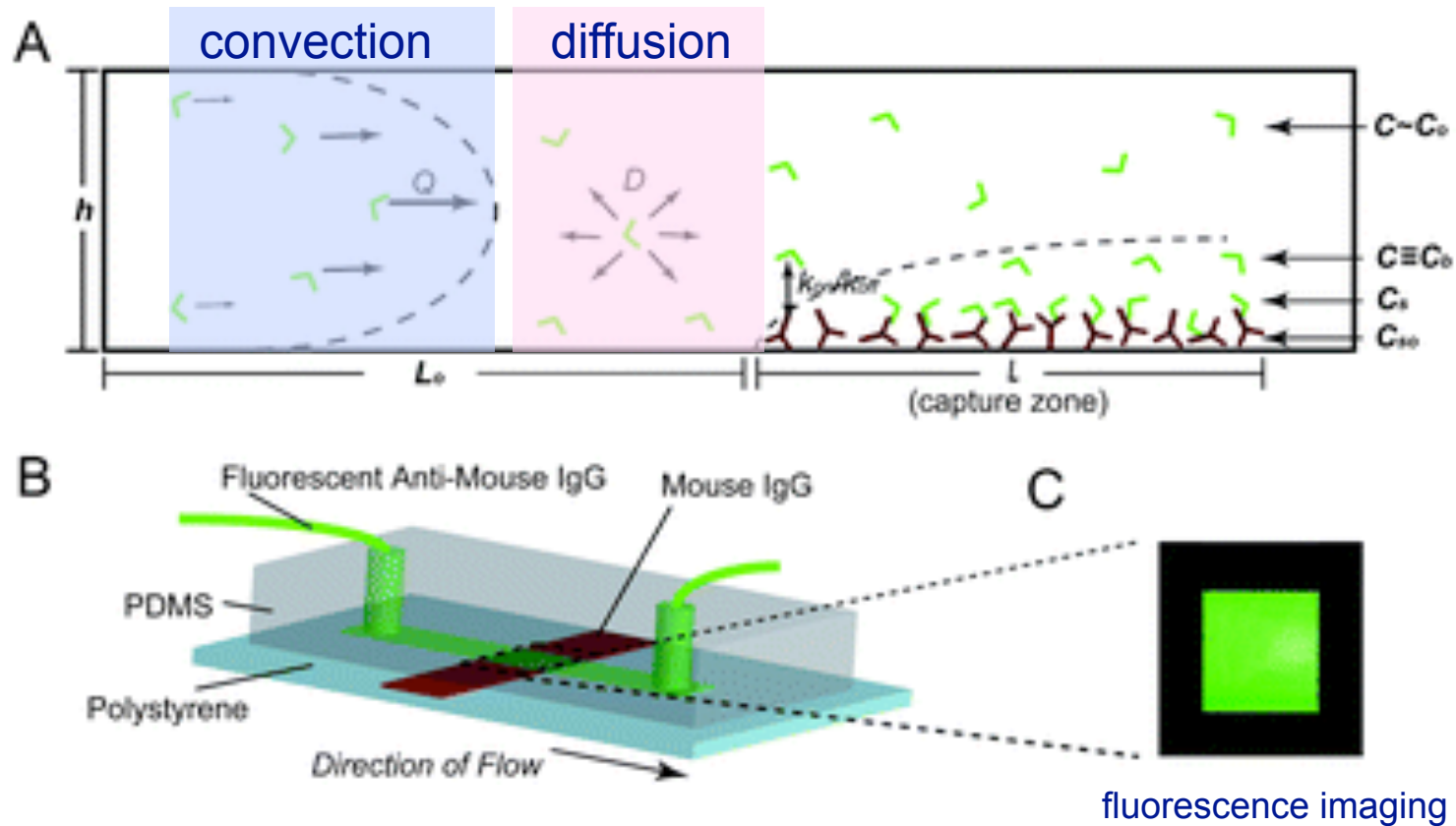
→ course on Microfluidics: Nicolas Bremond

Engineering at small scale : designing a microchip ?



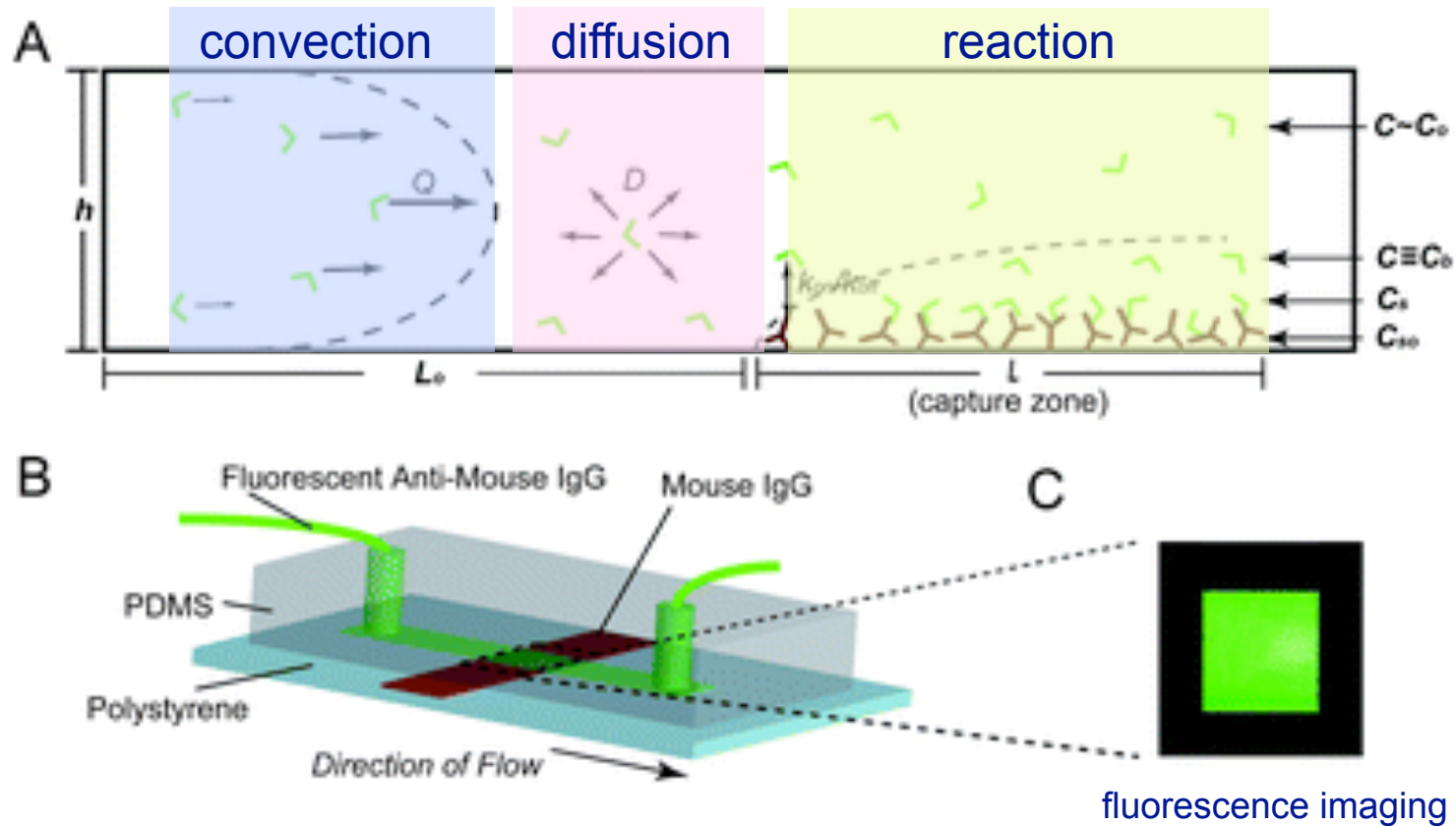
→ course on Microfluidics: Nicolas Bremond

Engineering at small scale : designing a microchip ?



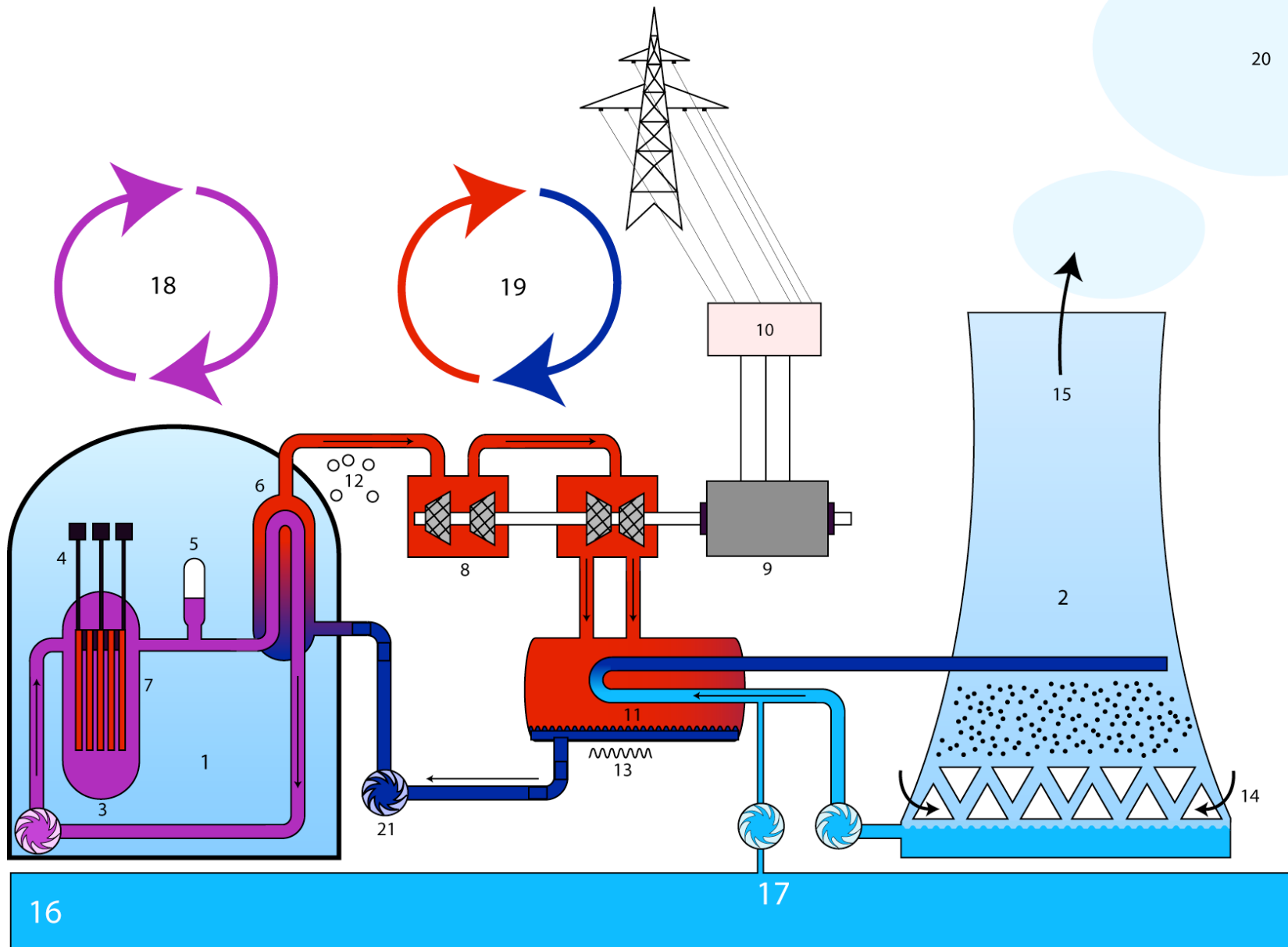
→ course on Microfluidics: Nicolas Bremond

Engineering at small scale : designing a microchip ?

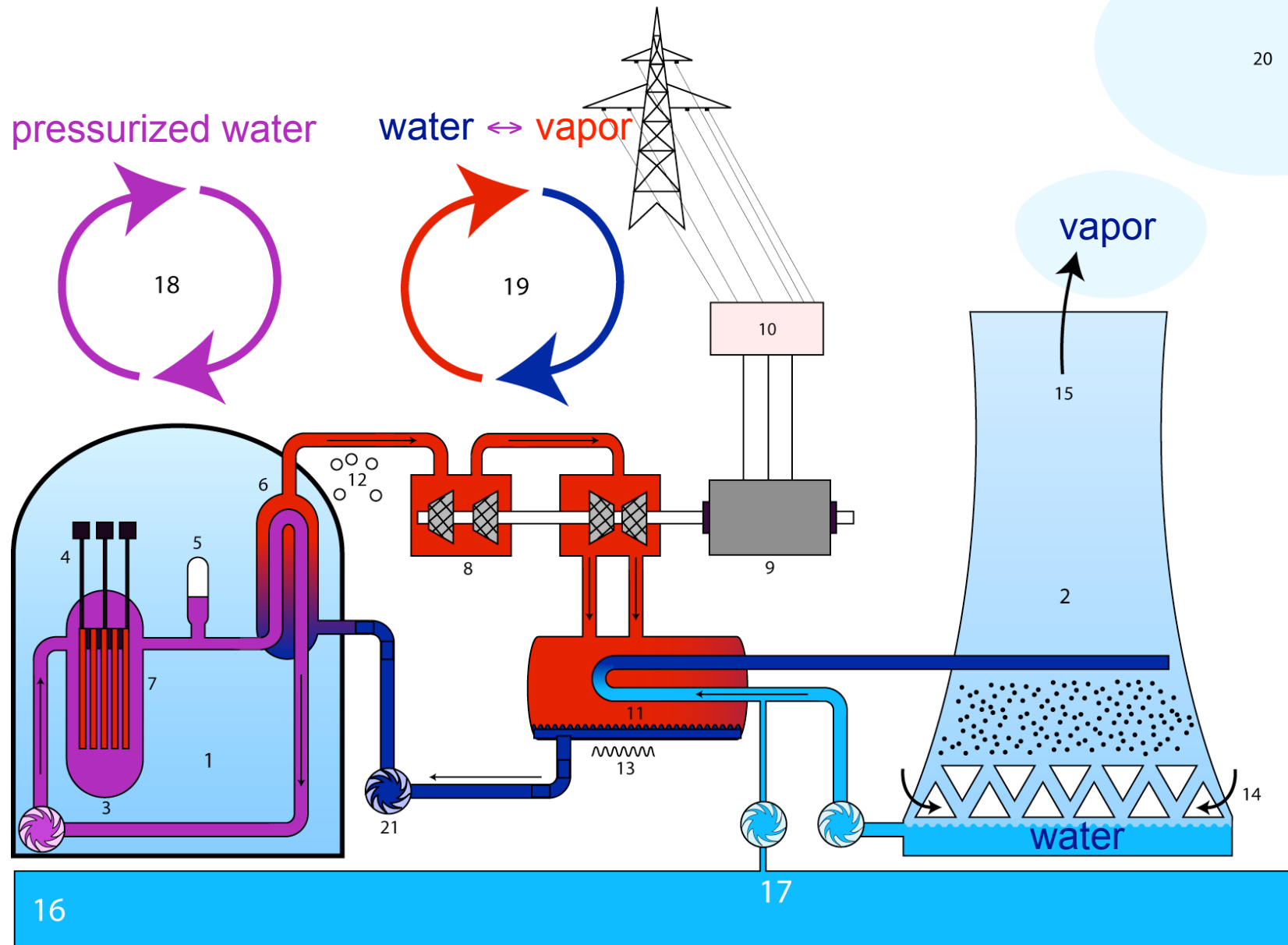


→ course on Microfluidics: Nicolas Bremond

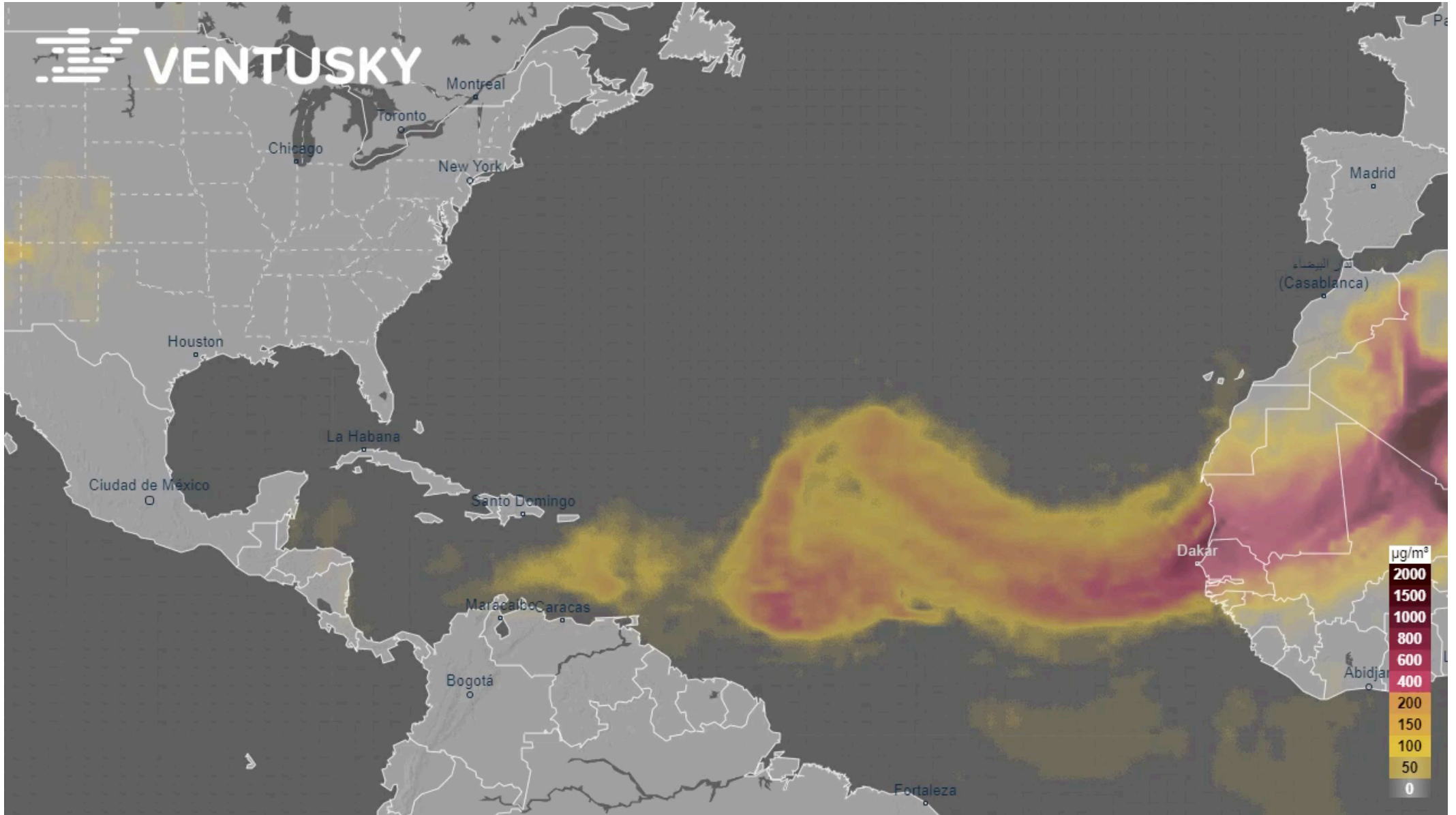
Engineering at large scale : a nuclear reactor



Engineering at large scale : a nuclear reactor

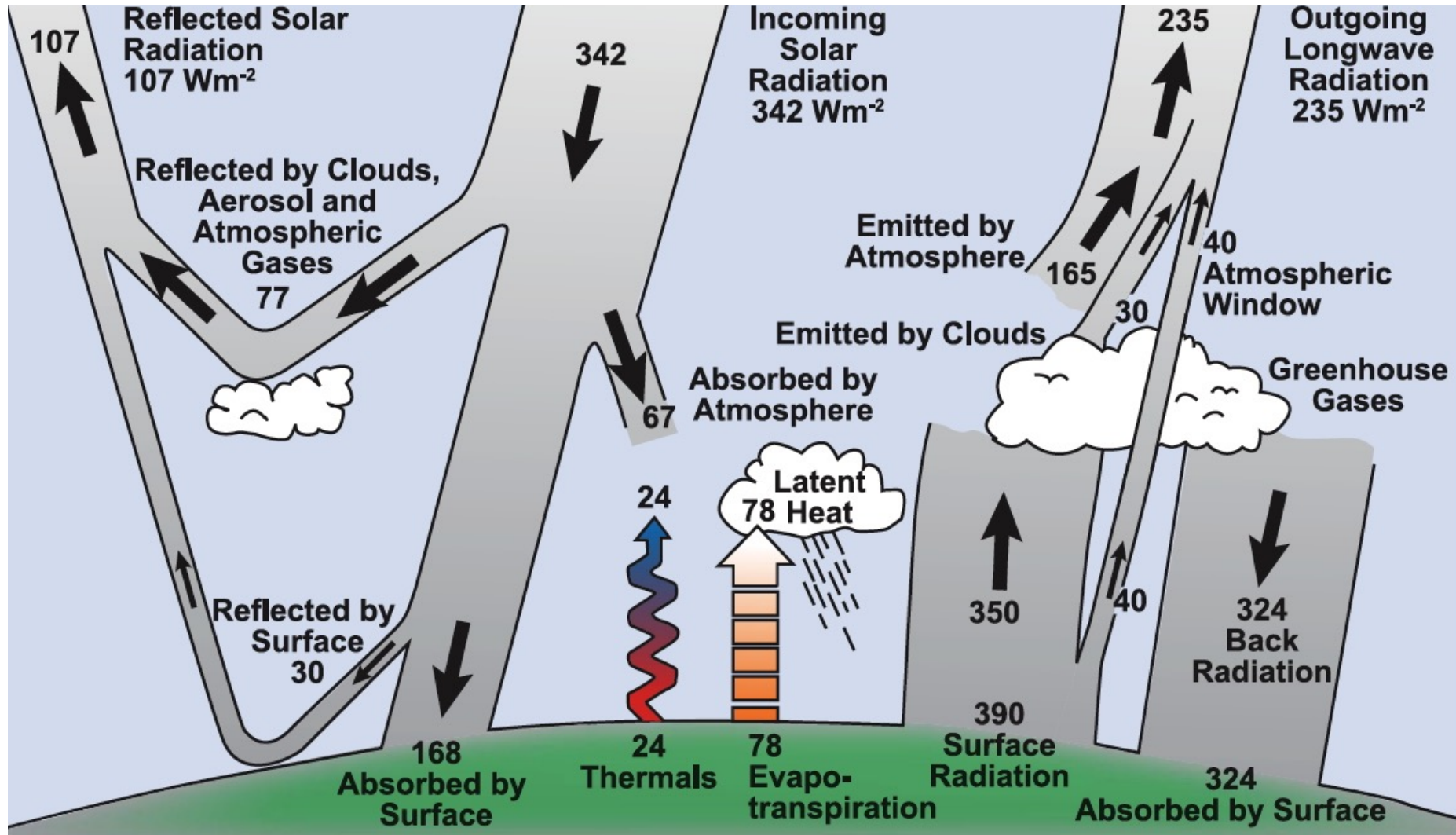


Mass transport in the environment

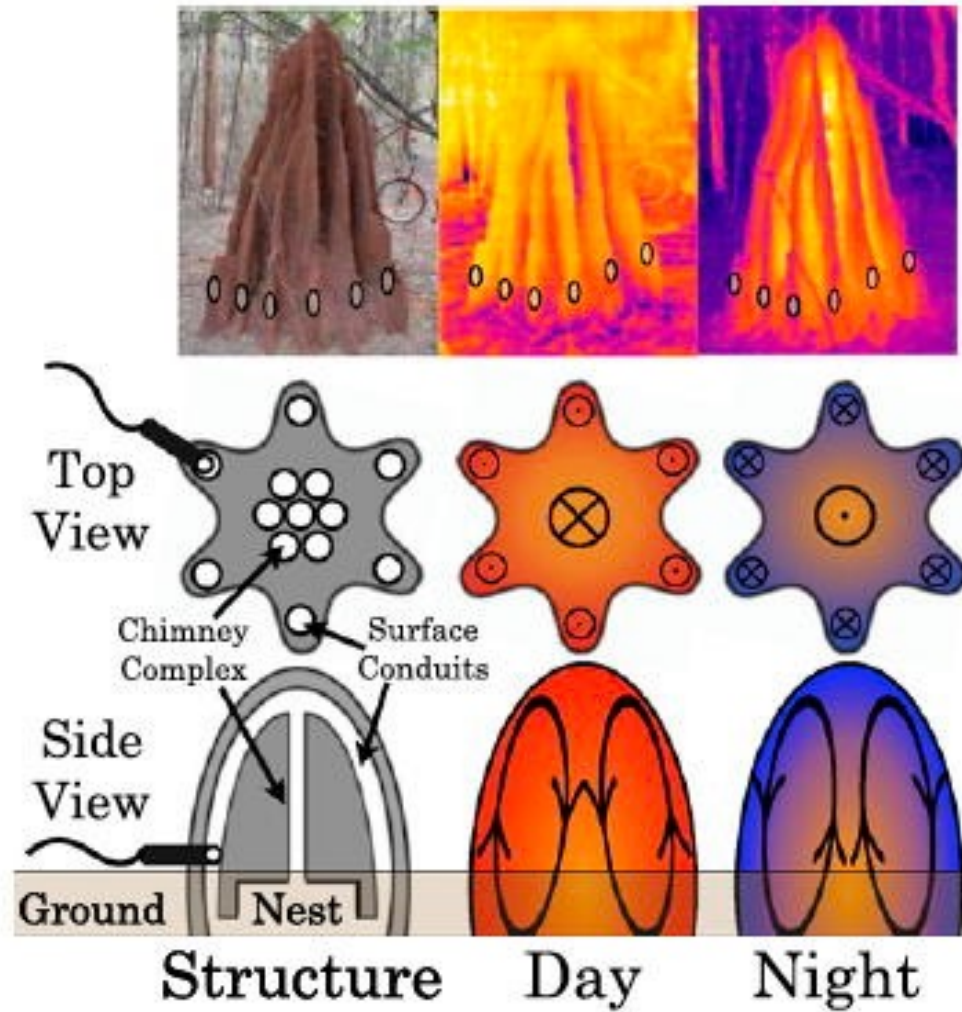


Dust from Sahara

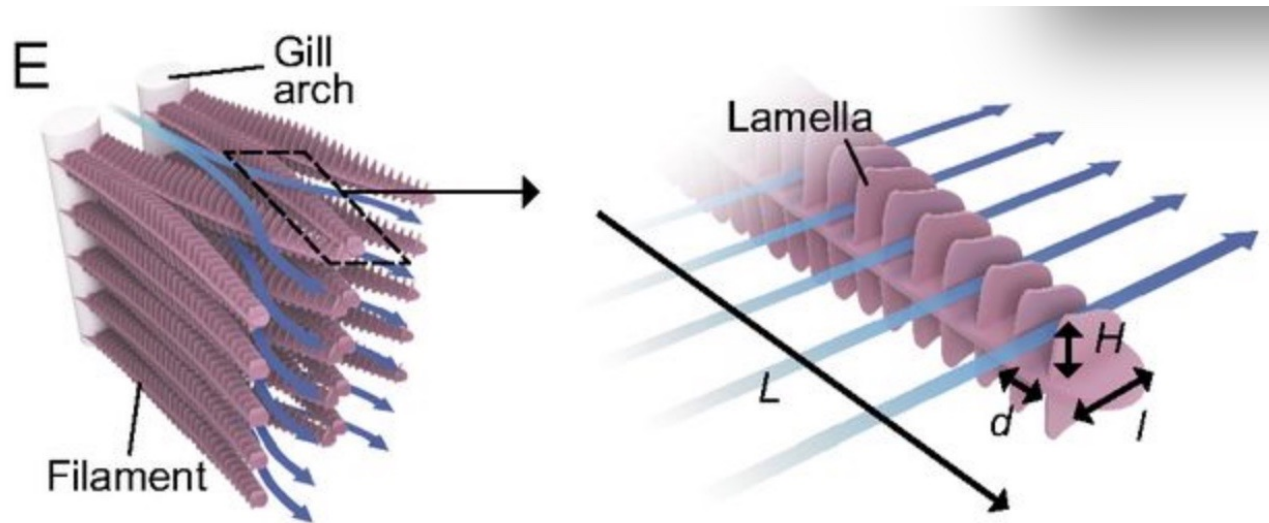
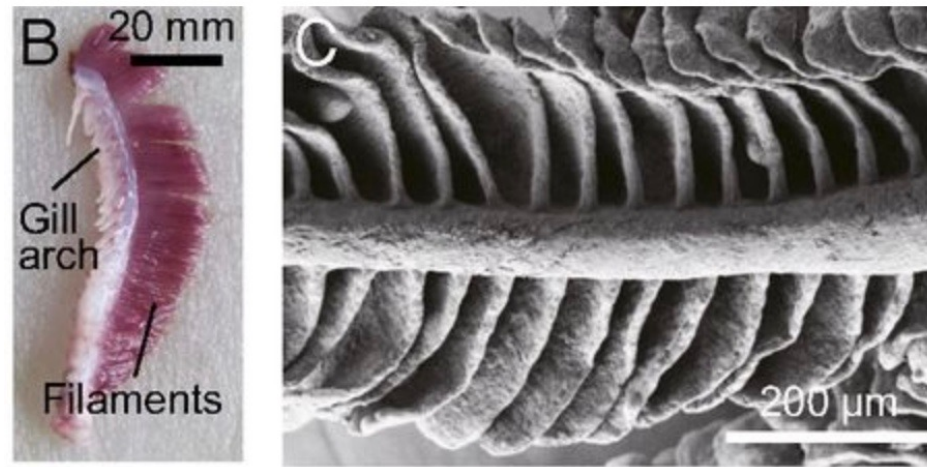
Heat transport in the environment : radiative equilibrium of the Earth



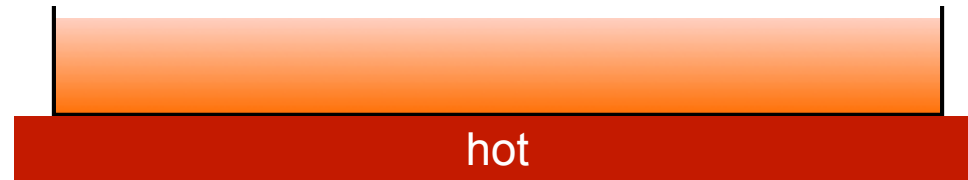
Heat transport in the environment : Thermo-convective flow in a termite mound



Mass transport in living systems : optimal geometry for fish gills ?



And some instabilities



<https://youtu.be/nQUH9nGTZTY>

→ course on Instabilities: Laurent Duchemin

Starting with a layered cocktail



Is the configuration stable ?

How long will it take to vanish ?