Abstract Submitted
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Flow and mass transfer around a core-shell reservoir BADR KAOUI, CNRS, Biomechanics and Bioengineering Laboratory, Compiegne, France — I have developed an alternative numerical approach to study mass transfer from a stationary core-shell reservoir under channel flow conditions. I use the lattice Boltzmann method to compute both the solvent fluid flow and the diffusion and advection of the solute. I have investigated the impact of the flow by reporting mass transfer quantities such as the instantaneous solute concentration and the local Sherwood number at the surface of the reservoir. The flow is found to enhance the release of the encapsulated material, but it prevents the released material from reaching the channel walls [B. Kaoui, Phys. Rev. E 95, 063310 (2017)]

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