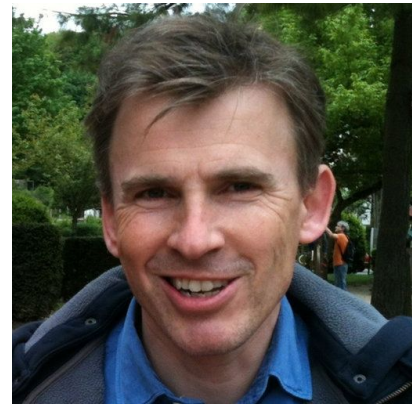


Interview with Mr Cockx

WHO ARE WE INTERVIEWING? (job, studies...)

Arnaud Cockx is professor at the National Institute of Applied Science (INSA) in Toulouse. He is Head of the Transfer Interface Mixing team (TIM) at the Toulouse Biotechnology Institute (TBI).



CONTEXT (Why did we do this interview?)

One of the particularities of our synthetic coculture is that we are growing co-dependently anaerobic bacteria and aerobic yeast. Hopefully, the bacteria is an aerotolerant but it makes the dioxygen a critical compound of the system. On the other hand, the carbon source brought to the system is CO_2 and to be assimilated, the bacteria need H_2 . That makes CO_2 and H_2 also critical components of the system.

This is why we need to add the gas transfers to our model. Mr Cockx is an expert used to work on exchanges into reactors. We needed to know more about hollow fiber membrane, their functioning, uses etc. Mr Cockx is also used to model many fermentation processes so he can guide us during our modeling strategy to be as rigorous as possible.

RATIONALE (What questions did we ask him? What answers did we want to have?)

We planned a meeting to discuss with him about our project and how we should implement the gas transfers in the model. It redirected us toward many useful reviews on hollow fiber membrane and gave us examples of application.

INTERVIEW (summary of the interview)

Before this interview, we knew that the best for the gas transfer is hollow fiber membrane. He explained to us how to model the transfer of a gas in a hollow fiber membrane and he followed the development of the model. He advised us to contact Mrs Lafforgue because she worked on co-culture before.

When we completed the first draft of the model, he advised Eliot to check our mass balance at several stages of our model to ensure that our predictions were correct. At the same time, he advised us to check our use of resources in the process, mainly carbon.

PRIOR WORK (previous work that led to this interview)

Modeling of gas transfer and mass balance were implemented into the model as he suggested.