

# Dmytro SNISARENKO

PhD student / ESR 2

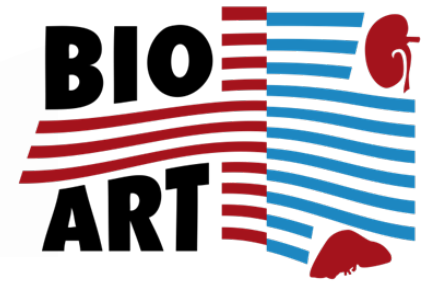
PhD on

Medium sized molecules clearance through  
artificial kidneys

**Aim & Things done**  
*October 2014*

**PhD start date: September 2013**

Paul Sabatier University, France



## Objective of the work:

- The main objective of project “*Medium sized molecules clearance through artificial kidneys*” is to develop an optimal strategy to control the transfer of medium size molecules such as Beta-2-microglobulin through artificial kidneys.

## Current problems:

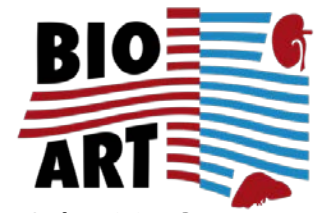
- Accumulation of beta-2-macroglobulin during conventional dialysis, which leads to dialysis-related amyloidosis;
- Membrane fouling due to protein adsorption.

## Strategy:

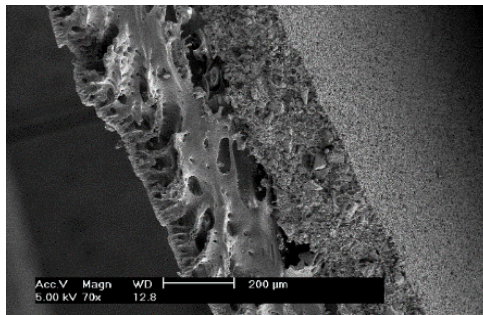
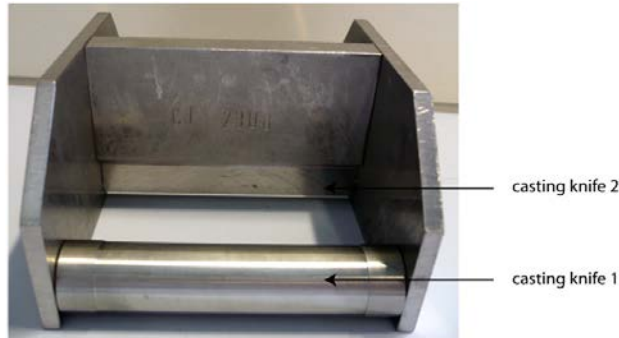
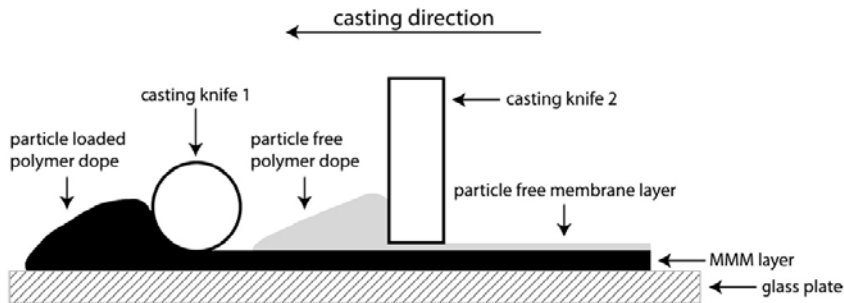
- Coupling of microfluidics device with the “real-time” fluorescent microscopy for direct observation of permeation and fouling;
- Mathematical model for prediction of influence of several indicators, such as molecule diffusivity, membrane thickness, content of adsorptive particles etc on flux intensification across the membrane at local scale.



# Secondments



## Secondment in UTwente



Tijink, M. S., et al. (2012). *Acta Biomater* **8(6)**: 2279-2287.

## Secondment of ER1 in UPS

