

Application Form Internship

Applicant (manager):	Wietze Nijdam
(start) Periode of the internship:	September 2022
Name of the assignment:	Improvement of an aerosol mix chamber
Coach of the student:	Wietze Nijdam
Possible field(s) of study:	Technische Natuurkunde, werktuigbouwkunde, BML Advanced Technology, mechanical engineering,
Kind of internship:	Internship // End assignment*
Level of study	WO // HBO
Description of the tasks or assignment:	In Medspray inhalers droplets are generated using a silicon based nozzle plate inside an aerosol mix chamber. The aerosol mix chamber slows down the uniform droplets generated and adds these to the inhaled air stream. Using pressurized liquid, jets are formed through these nozzles. The jets breakup into droplets by means of Rayleigh breakup.
	The efficiency of an inhaler is characterised by the amount of collisions between droplets: with less collisions taking place, the Mean Mass Aerodynamic Diameter of the aerosol decreases. A small MMAD made with an efficient mix chamber requires lower pressures and forces and thus a less complex device design.
	In the assignment the influence of various mix chamber designs on the aerosol will be studied: models will be made, 3d printed design will be prototyped and tested. Results will be analysed and improvements to the designs will be made and tested

* strike through if not applicable