

Master's Thesis

Anticipated start: From August/September 2024

Duration: Minimum 6 months

Location: Wetsus Research Center, Leeuwarden, the Netherlands

Motivation

Minimizing fluid drag is essential for diverse engineering applications, particularly in channel flow and pipeline systems. Our goal is to investigate the effectiveness of implementing shark inspired structures for fluid drag reduction in channel flow using optical techniques.

Opportunities for Master's Theses :

As a prospective candidate, your responsibilities would encompass:

- Establishing a Flow Visualization Setup: To establish a robust flow visualization setup, we will consider but not limited to both Particle Image Velocimetry (PIV) and Particle Tracking methods as strong candidates. The final decision on the optimal experimental flow visualization method will be made collaboratively. This process will include setting up the optical and laser systems, as well as the laser sheet, within our state-of-the-art laser laboratory.
- The setup is needed for characterization of turbulent flow within the channel and exploration of the mechanisms involved in drag reduction

Qualifications:

We are seeking individuals who:

- Possess interest in optical flow measurement methods, especially PIV or PT.
- Demonstrate interest in laboratory work.
- Are either EU citizens or non-EU citizens already enrolled in a Dutch university and residing in the Netherlands.

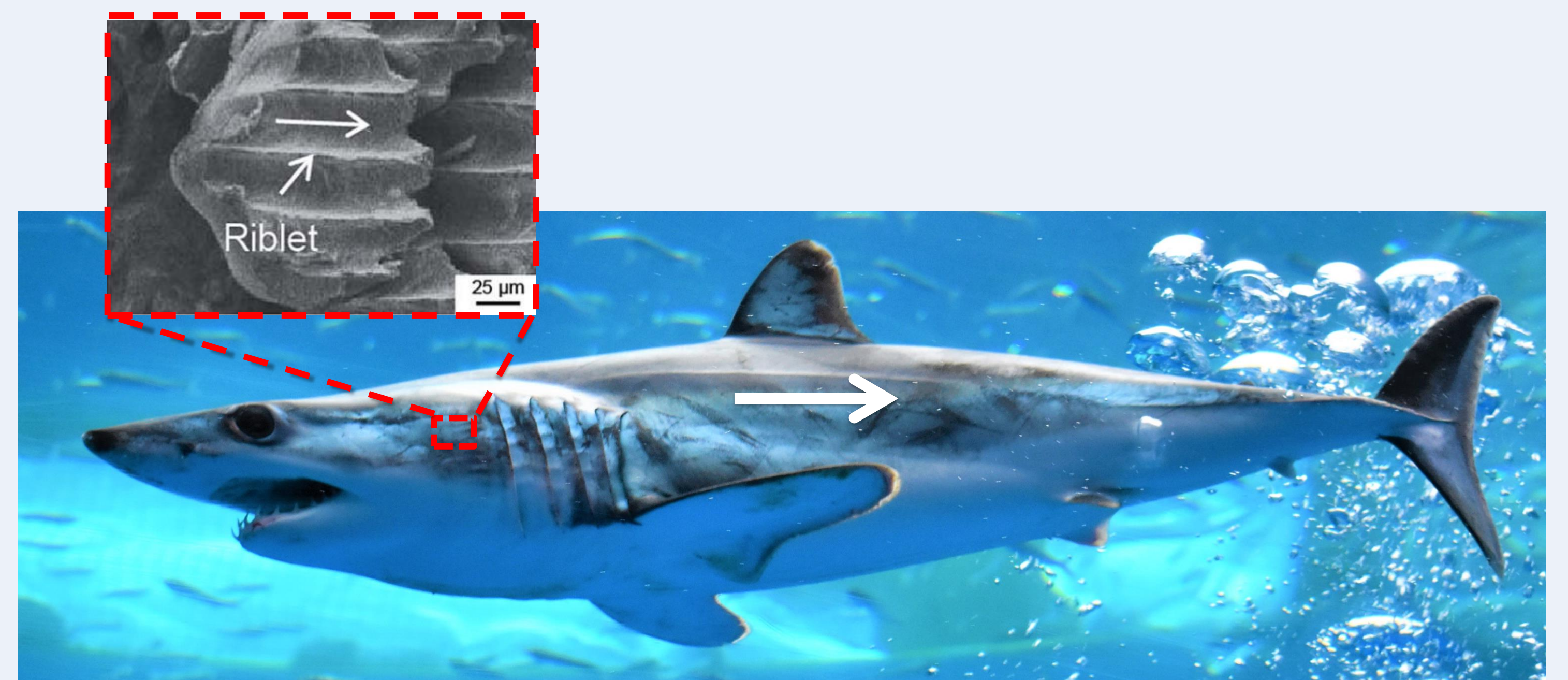


Figure 1. Digital photo of a Shortfin Mako Shark and magnified images of shark skin representing riblets.

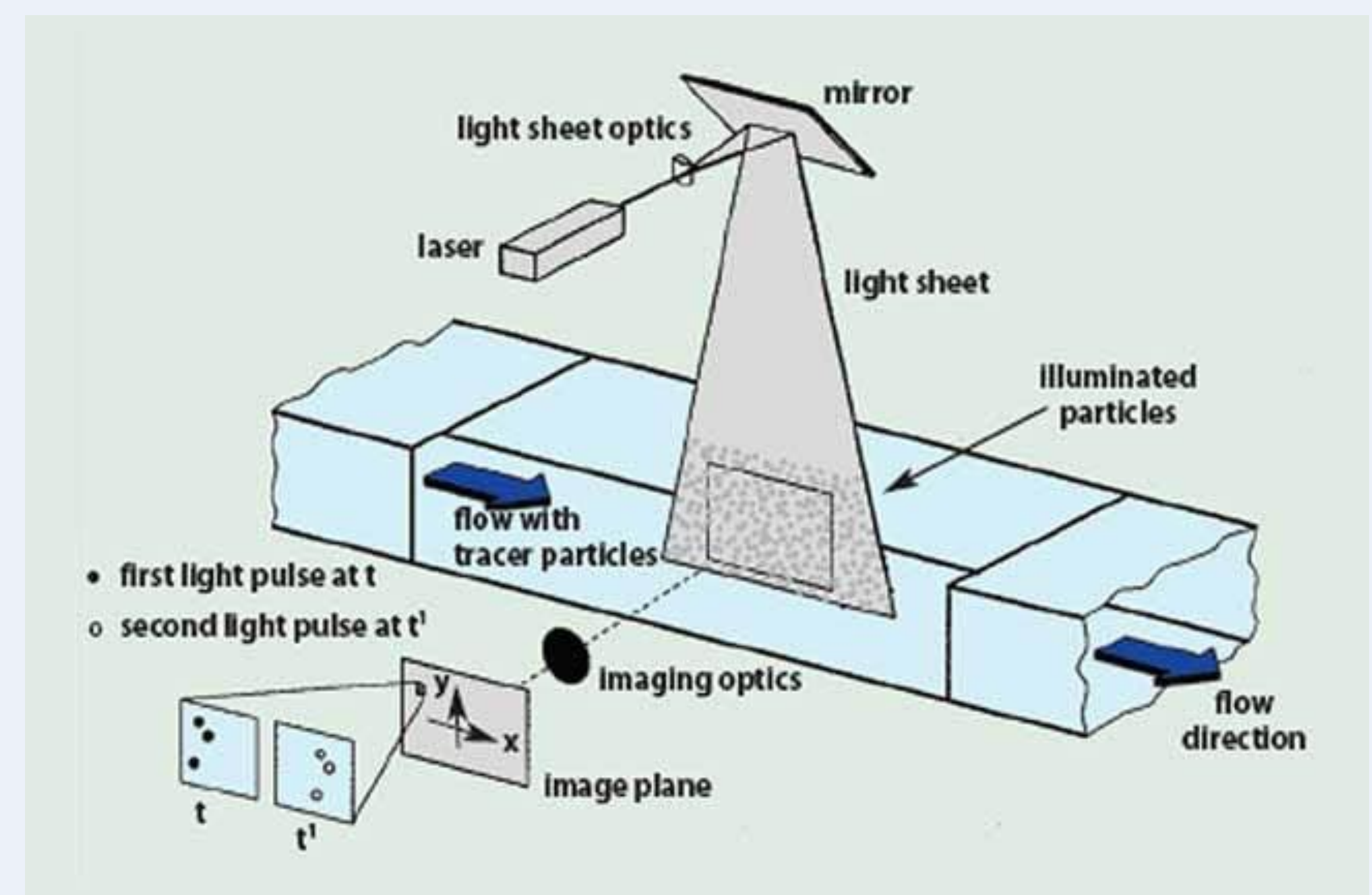


Figure 2. Experimental arrangement for PIV in a wind tunnel (www.photonics.com)

Benefits of Joining:

- By becoming a part of our team, you will:
- Acquire valuable hands-on experience with cutting-edge laboratory equipment..
- Collaborate with colleagues from diverse cultural backgrounds in an advanced laboratory setting.
- Depending on your circumstances, receive a monthly allowance ranging from €200 to €400

How to Apply:

If you are interested in this exciting opportunity, please send an email to mche@wetsus.nl to initiate contact. Ensure to attach an updated CV and provide a detailed explanation of your interest in contributing to this project.