

Bachelor-/Studienarbeit

Oil Film Measurements of Diesel Engine Intake Ports

1. Introduction

The dynamics of charge motion during intake stroke of an internal combustion engine significantly influence its performance, emphasizing the importance of designing efficient intake ports [1]. In order to analyze relevant flow patterns surface flow visualization with oil films can be used, an example can be found in [2].

This project aims to set up and perform oil film measurements of different intake flow geometries that are part of an ongoing project at ISM. Interested candidates can get in touch with Dr. Ali Kahraman in room 129 or via e-mail ali.kahraman@tu-braunschweig.de .

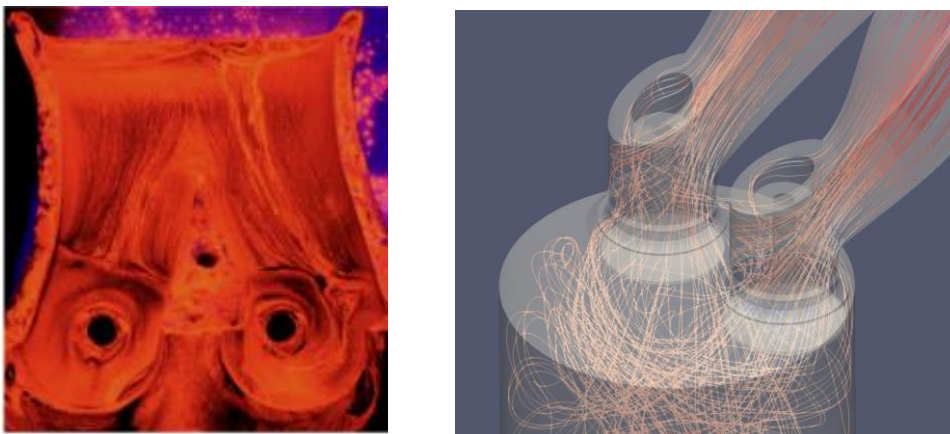


Figure 1: Left: an sample oil film measurements in an intake port. Right: A sample computer simulation showing streamlines of an intake port at ISM

2. Literature

[1] Sun, S., Eilts, P., Scholz, P., & Haubold, S. “Active Control of Cylinder Charge Motion Using Vortex Generating Jets (VGJs) on Generic Intake Port Geometries” SAE International Journal of Engines, 11(4), 475–490, 2018

[2] Simmons, D. J. “An Experimental Investigation of Smooth-Body Flow Separation” Ph.D. Thesis. University of Notre Dame, Notre Dame, Indiana, 2020