**Results and analysis**

In the modelling section, we referred to two models to be studied, one was ideal and was only to understand the pure core of the corona discharge phenomenon and how to get it exploited well and the other was the realistic one which all our results and analyses will diverge from.

**The model of wire to cylinder lifter**

In our analysis of this model, we put three different scenarios in consideration and aimed to compare the results between them in order to get a good sense with so far accurate details of how the lifter works.

The scenarios we adopted to get the results were on four pillars as follows:

1. Hardware implementation of the lifter

we aimed to implement the lifter and get accurate results by measuring the thrust we got.

1. Solving the equations using Matlab

In this scenario, we wanted to use numerical methods to solve the equations adopted by the model to correctly get the thrust and plot the result.

1. Simulating the model using CST

Using previously-defined packages that are specified to simulate the corona discharge was the foundation of this scenario.

1. Simulating the model using Comsol

This last scenario is very close to the previous scenario as we intented to use more than one simulation tool because of the difficulties we faced during doing the simulation using both ways.

Results and Analysis

The document "Results and Analysis" discusses the examination of two models in the field of corona discharge phenomenon. One model is an ideal representation aimed at understanding the fundamental principles of corona discharge and its effective utilization. The other model is a realistic version from which all the obtained results and analyses will diverge.

The specific model under analysis is the wire to cylinder lifter. In studying this model, three different scenarios were considered to compare and evaluate the results, aiming to gain a comprehensive understanding of how the lifter operates with accurate details.

The analysis was conducted based on four pillars, which are as follows:

1. Hardware implementation of the lifter: The objective was to implement the lifter physically and obtain accurate results by measuring the thrust generated.
2. Solving the equations using Matlab: This scenario involved utilizing numerical methods to solve the equations adopted by the model, enabling the accurate determination of thrust and the plotting of results.
3. Simulating the model using CST: This scenario relied on predefined software packages designed for simulating corona discharge. The focus was on simulating the model using these tools and parameters.
4. Simulating the model using Comsol: This scenario closely resembles the previous one, as it aimed to employ multiple simulation tools, including Comsol, to address the challenges encountered during the simulation process.

Overall, the document presents the results and analysis obtained from the study of these models and the various scenarios employed to gain insights into the corona discharge phenomenon and its practical applications.