

IAF SPACE PROPULSION SYMPOSIUM (C4)
Late breaking abstracts (LBA)

Author: Mr. George Defo
Concordia University, Canada, george.defo@hotmail.com

Mr. Intisar Salam
Concordia University, Canada, intisar.saiman@spaceconcordia.ca

Mr. Amir Rhnima
Concordia University, Canada, amir.rhnima@spaceconcordia.ca

Mr. Oleg Khalimonov
Concordia University, Canada, oleg_kha@outlook.com

Mr. Alexander Robitaille
Concordia University, Canada, alexander.robitaille@spaceconcordia.ca

Mr. Serge Mario Rakotonirina
Concordia University, Canada, serge.mario@spaceconcordia.ca

Mr. Timothy Morvan
Concordia University, Canada, titimorvan2001@gmail.com

Mr. Henri Massicotte
Concordia University, Canada, henri.takahashimassicotte@spaceconcordia.ca

OVERVIEW OF TESTING AND MANUFACTURING OF AN ABLATIVE COMBUSTION CHAMBER
FOR A LIQUID BI-PROPELLANT ROCKET ENGINE**Abstract**

The purpose of this paper is to review the design, manufacturing processes, and testing methods used in making an ablative combustion chamber. Its design was initiated with the advent of the Base 11 Space Challenge and was continued independently by the student society known as Space Concordia. The chamber's manufacturing is divided into three main components. First is the liner, which is the part providing the ablative capabilities of the engine. Then is the carbon overwrap that gives the liner structural integrity. Lastly is the flange, which links the combustion chamber to the injector. For each component, there were design alterations, as well as changes in the manufacturing techniques, which gave different results in testing. These test results came from experiments that were conducted on each of the mentioned sections of the chamber. The combination of all three was ultimately tested in a static firing.