



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_22317
Title of the Manuscript:	Improvement of Cryogenic Space Rocket Engine Ignition: inert gas sweep effects
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments	<p>This paper deals with important subject of cryogenic rocket engine.</p> <p>The contents may be useful to researchers and I'd like to recommend to publish this thesis.</p> <p>However, some minor changes are needed, especially for false English expression and grammar and improper word selection</p> <p>Please revise with reference to attached lists.</p> <p>You suggest that the difference of thermo-acoustic oscillations between condition 1 and 2 is due to thermal effect. However, the basis for your suggestion is not explicit. State your ground on line 457-464.</p> <p>ABSTRACT</p> <p>➤ 2) with helium gas injected simultaneously with nitrogen during the initial 150 first</p>	<p>Additional explanations were given.</p> <p>All corrections have been done.</p>



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	<p>milliseconds.</p> <ul style="list-style-type: none"> ➤ density and pressure at injector exit were where measured by means of load cell, piezoresistive sensor and resonance cavity, respectively. ➤ led to suggest the thermal effect as the major effect in the production of these oscillations. ➤ it shows that TAO are generated in the unit engine much earlier than after ignition inside the combustion chamber. <p>Introduction</p> <p>16 In recent years, Since a few years, with the proliferation of project</p> <p>17 new stakes have been raised regarding ignition</p> <p>31 two propellant fuel supply turbopumps themselves</p> <p>operated fed by a portion of the resulting combustion gases</p> <p>34 Oxygen enters a cavity called LOXdome and is supplied to the combustion chamber</p> <p>50 The time lasting between H2 admission and ignition generally lasts several hundreds of milliseconds seconds</p> <p>51 This procedure creates an insufficient reducing mixture before ignition</p> <p>52 This transient combines different types of oscillations due to the LOXdome and the temperature difference of temperature between the cryogenic propellants and the walls in the LOXdome [15].</p> <p>55-57 This complex thermo-hydraulic instabilities do not</p>	
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	<p>facilitate ignition [16] whereas short time ignition is favored by stable and homogeneous mixture “intimately and uniformly mixed” → this sentence is not clear. Re-state this sentence.</p> <p>MATERIAL AND METHODS</p> <p>79 done as for the rocket engine with helium Helium gas (He) injected into in the LOXdome</p> <p>4. DISCUSSION</p> <p>462 this might be thought in terms of phase change number lessened</p> <p>463 through the reduction of the heat flux and in terms of subcooling number lessened through</p> <p>464 the reduction of the inlet subcooling enthalpy. → this sentence is not clear. Re-state this sentence.</p>	
<u>Optional/General</u> comments		