“Hybrid Rockets are a Game-Changing Technology for In-Space Transportation”

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Desired Orbit

“Last Mile” Transport
“In Space”

Ride Share Orbit

“Kick Motor”
<table>
<thead>
<tr>
<th>Feature</th>
<th>Ion</th>
<th>Gas</th>
<th>Liquid</th>
<th>Solid</th>
<th>Hybrid</th>
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<tbody>
<tr>
<td>Non-hazardous</td>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>✗</td>
<td>✔️</td>
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<tr>
<td>Low cost</td>
<td>✗</td>
<td>✔️</td>
<td>✗</td>
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<tr>
<td>Powerful</td>
<td>✗</td>
<td>✗</td>
<td>✔️</td>
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<tr>
<td>Controllable</td>
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<td>Commercially Available</td>
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<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>✔️</td>
</tr>
</tbody>
</table>
(Hybrid) Rocket Motor

Liquid Oxidizer
O₂, N₂O, H₂O₂

Solid Fuel
PE, PB, PP...

Combustion Gas
H₂O, CO₂...

N₂O/PE Attributes:

Isp: 320 s
HDPE Density: 950 kg/m³
N₂O Density: 900 kg/m³
Ideal O/F: 7
Vapor Pressure: 4-5 MPa
Non-corrosive | Non-toxic
Widely available | CAM (HDPE)
N2O/HDPE Hybrid Rocket Kick Motor

We are aiming for commercialization

Researched By

Hokkaido University

JAXA

supported by

JST

MEXT

We are aiming for commercialization
“Ryugu” : 30 billion USD

https://www.asterank.com/
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