



**PULSE DETONATION JET ENGINE VUJIN**

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| <b>Project title</b>      | Pulse detonation jet engine Vujin  |
| <b>Sector</b>             | Inovation sector   |
| <b>Location</b>           | Bosnia and Herzegovina   |
| <b>Project background</b> | <p>The primary object of the invention is to construct a completely new propulsor, without moving parts, which can make better use of the chemical energy of the input fuel, with low harmful emissions, not to use motor oils and thus be more environmentally friendly than existing propulsors.</p> <p>A secondary object of the invention is to construct a hybrid propulsor, which when it is needed, can be used as an external oxidant from the atmosphere or an internal oxidant in rocket propulsion, while maintaining high performance.</p> <p>Further objects of the invention are the development of propulsors in the direction of completely pure drive technologies.</p> <p>By constructing a new pulse detonation propulsor Vujin, on a completely new basis, the problem defined above was solved.</p> |
| <b>Project status</b>     | The project is in the development phase  |



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| <b>Innovation description</b>                   | Pulse detonation propulsor Vujin, is a high stage in the development of pulse detonation propulsors. It is intended primarily for the propulsion of aircraft, and with minor modifications it can also be used as a combustion chamber for the propulsion of gas turbines. The construction consists of an inlet (8) with a resonant chamber (10), an air flow regulator (9) of Tesla fluid diodes (8), pulse jet compressors (16) and (17). The detonation chamber (13) in the middle part has a starting injector (11) with a spark plug (12), the front part ends with a traction wall with an integrated detonation stabilizer (2). In the rear is the jet tube (15). Technical solutions and procedures enable wide application of pulse detonation propulsor Vujin, primarily for use in high speed and high altitude regimes. Depending on the operating conditions, it can be used as an aspiration or autonomous propulsor. The field of technology is mechanical engineering |  |
| <b>Intellectual property, Patent</b>            | PATENT PCT/BA2021/000001 WO/2021/146779  |  |
| <b>Estimated total investment cost</b>          |  |  |
| <b>Inputs required from foreign partner</b>     | <b>Value</b>   | <b>Description</b>                         |
|   | 350 000 000 EUR  | Creating a prototype of motors and testing |
| <b>Form of cooperation with foreign partner</b> | <b>Financial</b>   | <b>Technical</b>                           |
|   | Sale of a patent.<br>The establishment of a joint company.   | Marketing                                  |
| <b>Supporting information available</b>         | For additional information about this project, please contact FIPA either by e-mail: <a href="mailto:fipa@fipa.gov.ba">fipa@fipa.gov.ba</a> or phone number: +387 33 278 080.  |  |