

Other

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## **VIRTUAL SCIENTIFIC AND TECHNICAL SUPPORT FOR STARTUPS**

### **Start-up projects and their virtual scientific and technical support in order to accelerate the process of developing medical and cosmetic technologies**

***Summary.** Even the most daring and seemingly brilliant commercial and technological idea requires deep professional verification before becoming the subject of an innovative project.*

*Therefore, at the stages of primary decision-making, a clear and feasible methodology for deep and multidisciplinary search in available arrays of information is required.*

*As a rule, the search methodology and, most importantly, the methods for evaluating search results require much deeper knowledge in specific areas of science and technology, and at the most modern level.*

*Those partners in future projects who, before this project, had experience and practice in real invention, of course, can use the accumulated experience of patent search, but such experience very quickly becomes obsolete and each new direction in the development of technology immediately requires an adequate response in assessing everything new, possibly contained in the declared idea of a new product.*

*In order to clearly formulate and set the task for the project working group, it is necessary, taking into account the dynamics of development of the technology sector to which the new project relates, to develop a survey analytical matrix document in which the main search operations are aimed at analytical verification*

*of the reality of distinctive features and positive effects precisely at the junction of classical exact disciplines*

*It is known from the experience of heuristic storms that the most successful and feasible ideas arise at the intersection of known disciplines and are characterized by multidimensional intellectual diffusion into the layers of classical science and technology.*

**Key words:** *Startup, Startup project, Parameters of technical characteristics, Adaptation of modern machine design technologies, Dynamics of development of the economic sector, Reliability of modern multifunctional systems, Algorithmic component of the startup project, The idea of optimization and optimization of the main product of the project, Methods of proving and demonstrating the advantages of a new technology and an innovative product implemented on its basis.*

Organizational issues, in almost any new project, necessarily include additional systemic coordination of the level of knowledge and technical and technological training of the employees of the working group.

As practice shows, even an ambiguous understanding of the tasks and technical specifications for development, caused by different basic knowledge and experience, as well as differences in the technical and technological culture of people from countries with heterogeneous technological development, can have a significant impact on the results of development, especially in the fields of medicine and cosmetology, presented by the famous innovation specialist Maryna Savchenko;

In this regard, for smart startup projects in the fields of surgery and cosmetology, it makes sense to start work on a new project using the system developed and successfully applied by Maryna Savchenko: - Preparation of a

systemic technological forecasting of development options for the direction of technology underlying the new product;

As the economies of developed countries become increasingly vulnerable to various kinds of, mostly subjective, financial shocks, it becomes clear, at least to specialists who initiate the innovation process, that only confident, progressive advancement of such a process can strengthen the stability of economic development.

Unfortunately, time has not changed anything and, no matter what financiers and stock market speculators claim, the driving force of economic development and the relative stability that has arisen in connection with this can only be a developed innovation process, which is based on innovative stabilizing elements.

So far, the only coherent and least contradictory theory of such a developed innovation process can be the Theory of Inventive Problem Solving and its analytical algorithms and tools.

Of course, we are far from the idea that allows us to consider that the innovation process is autonomous and independent; this process is, first of all, integrative and establishes interconnections and mutual criteria of dependence between all elements and components of the economy.

Attempts have emerged to forecast that practically ignore the innovation process and form models of economic development that take into account only finances and credit flows.

The so-called technological adjustment of employees in a team of developers performing a non-trivial technical task, if this adjustment is left to chance, can lead to unexpected and not always positive results.

Modern communication technology opens up many unusual channels and opportunities in this direction, but communication technology and communications,

unfortunately, does not determine the composition of the information that is transmitted through these channels.

If, as is the case today, the working group includes representatives of technological cultural traditions from developed countries and from developing countries, then even the different levels of school preparation in these countries and, moreover, the different levels of university preparation require systematic leveling, since otherwise there is a danger of disproportions in the design and operating principles of the various units and components of the future innovative integrative product of the startup.

In order to determine the points and topics of the program of scientific and technological retraining and universal formation of the starting threshold of special scientific and technical knowledge and technical and technological working methods necessary for the consistent (but sufficiently rapid) development of the project, a unique scheme for selecting the topics of such accompanying training and a methodology accompanying the process of developing a smooth information expansion and virtual impact with the aim of transferring the necessary knowledge and technological methods to all employees of the working group can be proposed.

### **Innovative formulation of the problem**

The most daring and seemingly brilliant commercial and technological idea, especially in the fields of medicine and cosmetology, according to the top-level specialist Maryna Savchenko, requires deep professional verification before becoming the subject of an innovative project.

Therefore, at the stages of primary decision-making, a clear and feasible methodology for deep and multidisciplinary search in available arrays of information is required.

As a rule, the search methodology and, most importantly, the methods for evaluating search results require much deeper knowledge in specific areas of science and technology, and at the most modern level.

Those partners in future projects who, before this project, had experience and practice in real invention, of course, can use the accumulated experience of patent search, but such experience very quickly becomes obsolete and each new direction in the development of technology immediately requires an adequate response in assessing everything new, possibly contained in the declared idea of a new product.

In order to clearly formulate and set the task for the project working group, it is necessary, taking into account the dynamics of development of the technology sector to which the new project relates, to develop a survey analytical matrix document in which the main search operations are aimed at analytical verification and evaluation of distinctive features and positive effects precisely at the junction of classical exact disciplines

It is known from the experience of heuristic storms that the most successful and feasible ideas arise at the intersection of known disciplines and are characterized by multidimensional intellectual diffusion into the layers of classical science and technology.

The authors of this methodology, including the real developer and setter of innovative tasks Maryna Savchenko, plan to present readers with clear analytical matrices in the following sections, allowing for digital processing of the found and selectively selected information.

It is after such deep and comprehensive preparation that a project production model is formulated and successive project tasks are set in development.

Simulation and modeling of the level of capability in real time and in a real environment of performing the assigned task are also based on the same analytical matrices and comparative control principles

## **Reliability of modern multifunctional systems and the ability of TRIZ and ARIZ to influence the increase of its level**

The reliability of a technical system, and in particular the reliability of a complex hierarchy of technical local segments, some of which are software-based and closely connected with the system elements of the upper levels of the hierarchy, today has many concepts and meanings that are extremely difficult to integrate for a real understanding of the situation, and, in most cases, practically impossible.

Recently, developments have appeared that propose to single out from all local fragments of the integrated reliability of such a system some elements that determine the reliability of the most dangerous elements of this system, to some extent and at the expense of the comprehensive reliability of the entire complex.

Thus, the engineers proposed to consider malfunctions as inevitable when creating aircraft and developed a new approach to aircraft design. The scientists' work has been accepted for publication;

The difference with the new approach is that when designing, engineers did not try to optimize the aircraft according to the function it was performing, but looked primarily at the breakdowns that could occur in it.

To do this, scientists analyzed statistics on individual faults and determined the probabilities of their occurrence.

For each individual malfunction - from a burnt-out light bulb to engine failure - their impact on the aircraft as a whole, its controllability and aerodynamics were modeled.

As a result of this analysis, engineers received a tree of mutually influencing faults, based on which they could understand which parts should be changed.

As an example, engineers analyzed the malfunctions of a small 12-seat military aircraft, for which there were detailed breakdown statistics.

It turned out that in the case of certain failures, changing the geometry of the aircraft could significantly increase its safety. For example, in the case of a rudder failure or failure of one of the engines, a model with a larger **tail** would behave more stably.

Changing the geometry would make the plane less aerodynamically perfect, but would make it much more reliable.

The proposed approach could, for example, be useful for creating unmanned aerial vehicles that do not have the ability to land for repairs and must continue flying at all costs.

This is how devices are forced to work that study Antarctica, where there are no airfields or service personnel.

In the process of analyzing the situation, we will return to the tools of TRIZ and ARIZ, which were created to overcome this type and complexity of contradiction complexes.

In the theory of inventive problem solving, there is a special program for solving difficult problems. This program breaks down the solution process into approximately 50 successive steps. The program is equipped with special steps that help overcome psychological inertia. The program also has rich information support. This program is called ARIZ, an algorithm for solving inventive problems.

Initially, the "methodology of invention" was conceived as a set of rules such as: "to solve a problem means to find and overcome a technical contradiction" or "the solution to a problem is stronger the less the expenditure of matter, energy, space, time." The emerging "methodology of invention" also included some typical techniques: fragmentation, unification, inversion, change of state of aggregation, replacement of a mechanical scheme with a chemical one, etc.

The main source for identifying rules and techniques was information about the work of great inventors, their own inventive practice, and materials on the history of technology.

By the mid-1950s, the conviction had formed and strengthened that inventors, even the most powerful, work using the ineffective method of trial and error, and, consequently, the desire to discover and use the "secrets of creativity" is futile.

It is necessary to build a fundamentally new "methodology of invention" based on the use of objective laws of development of technical systems. These laws can be identified by systematic analysis of large arrays of patent information.

By the end of the 1950s, it became clear that the "invention methodology" should include not only ARIZ, but also a section on the laws of development of technical systems and a constantly replenished information fund. The "invention methodology" had to give way to the "science of invention". This idea met with strong resistance. The "invention methodology" was viewed as something more or less tolerable: after all, these were useful recommendations based on the study of the experience of inventors, there was no open overthrow of "sacred" concepts. The "science of invention" encroached on the "sacred" - it denied the exclusivity of great inventors, touched upon the usual idea of the unknowability of the creative process. The "invention methodology" helped to "be enlightened" - the "science of invention" denied all old technology, denied innate abilities. At that time, this was pure heresy...

Over the years, this Program becomes more rigid and specific. In the process of analysis, the operational zone and the contradictory requirements imposed on it are determined (the prototype of the FP). The RBC operator is introduced. Work on the TP elimination table is completed, the list of techniques is expanded (first 40, then 50). Instructions for performing steps, notes, and examples are introduced. The main operators form a system - the relationship between the steps is strengthened, a new part has appeared - a preliminary assessment of the idea found.



But over the years, the situation has also changed radically, as processor technology has emerged using elements of artificial intelligence and artificial neural networks, which has forced a completely different approach to the concept of reliability, since the rigid, mechanical understanding of reliability has been replaced by a more flexible one, due to more precise process and work cycle management using the analytical and control capabilities of high-level processor technology;

The following main directions can be identified in the evolutionary development of TRIZ and ARIZ in terms of the synthesis and modification of complex technical solutions, one of the fundamental basic indicators of which is the integrative reliability of the system:

1. Traditional for the evolution of ARIZ - a general increase in the degree of algorithmization due to a more complete and deeper use of the objective laws of development of technical systems, including processor ones.

2. Significant strengthening of the "bridge" between the physical contradiction and the method of its resolution, including that based on the use of composite materials and the latest achievements of digital technology.

3. Strengthening the information fund, strengthening the links between ARIZ and standards, including in the combination of operational production standards with environmental standards, the requirements and restrictions of which run counter to traditional economic norms.

4. Separation of the second half of ARIZ (development and use of the found idea) into an independent algorithm, having components of the type - Device, Program, system and method or associated method...

5. Development of a new initial part (or a separate algorithm) to identify new compositional and integrative problems.

6. Strengthening the general educational function. ARIZ should more vigorously develop the skills of strong, complex thinking.

7. Gradual increase in universalism in the process of creating a compositional model of a device or process closely related to software and processor technology.

Marina Savchenko, based on her deep experience in advanced areas of cosmetology development, believes that the following issues should be considered at the initial stages of projects:

**Formation of the primary version of the working technical characteristics of a new product**

**Comparison of technical characteristics with the requirements of current standards and current environmental regulations and restrictions**

**Formation of a package of technical requirements for a future innovative product**

**Development of technical specifications for the project**

**Development of a testing program and pilot industrial or commercial operation of a new innovative product**

**Development of a patent-licensing strategy for a new technology or product or their combination in modern commercial conditions**

1. TRIZ declared its rejection of the methodology of activating the enumeration of options, however, the main part of the so-called TRIZ tools were precisely such methods (the method of little people, the RVC operator, the material field analysis).
2. In TRIZ, the material field analysis was presented as a scientific approach based on the analysis of the patterns of structural development of technical objects. However, the admission of the use of non-existent physical fields in systems, as well as the possibility of ambiguous interpretation of these structures and the rules for their transformation, rather allow us to classify such analysis as a method of activating the enumeration of options, but not as a scientific analysis.
3. The closest to the idea of formalizing the procedure for solving inventive problems was the creation in TRIZ of a table and methods for resolving

technical contradictions. This approach was based on statistical analysis of the invention descriptions that existed at that time. However, despite the existing prospects, it did not receive further development in TRIZ, and due to a number of existing shortcomings and the moral obsolescence of statistical conclusions, it lost its relevance for practical use.

4. There is a widespread illusion about the possibility of implementing TRIZ in real production. In essence, TRIZ is an individual method of solving problems, the use of which is a personal choice for a person. For this reason, it is impossible to make TRIZ a part of any production process. At best, an enterprise can organize TRIZ training for its employees in order to increase their creative capabilities.

Determining the most advantageous parameters of the technical characteristics of a product on the market and developing a methodology for proving and demonstrating the advantages of a new technology and a product implemented on its basis

The history of cross-patent lawsuits in recent years between high-tech companies makes us once again examine and imagine the general process that has developed in large companies for creating inventions for which these companies then seek a patent.

So, who invents in such companies today, so to speak, out of production necessity or within the framework of their direct immediate production responsibilities?

As a rule, all production units that manufacture the product are located outside the company and are, at best, in related enterprises or, which is unfortunately typical today, in China.

That is, in a company, the responsibility for inventing is assigned mainly to programmers, analysts of various levels and capabilities, but not to mechanical engineers or electrical engineers, who are simply not on the staff of these companies,

given the current structure of the companies, they are simply not needed - they are needed in companies where production is concentrated.

That is, we can say that ideas for new products are successfully generated, but not in the form of a technical solution, but in the form of an abstract algorithm, a mathematical model, and finally a program, and all this has a very distant relation to classical technical solutions that can become the basis for a future invention.

Commerce cannot stand still and naturally thousands of patent applications are filed that have nothing to do with the invention, since neither explicitly nor implicitly they contain anything comparable to a full-fledged technical solution.

The vagueness of definitions and the almost complete absence of clear cause-and-effect relationships, the incompleteness of decisions lead to the fact that such incomplete decisions are perceived as abstract

Moreover, since in most cases we are talking about mobile communication tools and methods and tablet computers, it is very difficult, and in principle impossible, to distinguish one from the other.

Here, as we see it, the main role should be played by clear and unbiased patent legislation that does not allow compromises.

As practice shows, loopholes and inaccuracies in legislation, compromises with non-mechanical and non-electro-mechanical basic content of inventions should be excluded by law;

Again, for special technologies in the fields of medicine and cosmetology, Marina Savchenko considers it necessary to include the following operations in the process:

Selection of advantageous differences based on comparison with similar parameters and characteristics taken from classical science and the phenomena and methods described in it

Selection of structural and decorative materials, technique of selection of composite materials and possible prerequisites for creation of new composites and alloys

Mixing and homogenizing liquids

Formation of gas composites

Formation of aerosols and their introduction into multi-level compositional combinations

Vortex technological methods and techniques in achieving the goal

Theory of inventive problem solving and the ideal final result

TRIZ was conceived "as an exact science." For some time, all its laws and methods, in principle, corresponded to the level of development and capabilities of technology and engineering;

What is TRIZ really like today? How have modern high technologies and processor technology influenced its integration capabilities?

These are not all the questions that need to be clarified; As an important fact, it is necessary to note the widespread phenomenon of searching in biological objects for analogues of future inventions, especially on the basis of medical and biological-mechanical research; How does this fit with the laws, methods and techniques of TRIZ?

At present, most interesting and effective inventions arise on the basis of discoveries of some elements of living nature, which inspire inventors to new and new technical solutions that solve unusual problems using unusual methods and techniques.

Preparation of brainstorming systems to revive the processes of synthesizing the idea of optimization and modification of the main product of the project, in the development of which there is a stagnation

The experience of many projects in which the authors of this methodology played an active role shows that the most effective are brainstorming actions that are prepared in such a way that all participants in the brainstorming, to one degree or another, have mastered the techniques for forming effective technical solutions known from the Theory of Inventive Problem Solving 40

As is known, numerous and not always successful options for optimizing and modifying these techniques have appeared at the present time, which ultimately gave another 10 additional techniques, and it must be said that the emergence of design programs, namely design programs and not just graphic professional programs, allows the brainstorming process to be conducted not only in real mode, but also in virtual mode, and any idea introduced into the brainstorming process can be immediately modeled and simulated in real time.

In continuation of this methodology, the authors will offer software developments that will allow optimizing the process of preparing and conducting sessions and stages of brainstorming

Algorithmic component in complex innovative projects on the example of analysis of development of technologies for modification of fuel mixtures, including use for modification of biofuel compositions

As statistics of innovative projects show, the algorithmic component, including the logistics of the entire innovation process, starting from the formulation and synthesis of an innovative idea and ending with the process of integration into a specific production and commercial structure, has an ever-increasing impact on the commercial value and efficiency of these projects.

Since we have experience and technological and commercial developments in the most popular technologies for modifying fuel mixtures today, we propose to consider the algorithmization of this group of innovative projects as an example.

Currently, according to information that can be obtained from open sources, there is a trend towards modification and modernization of internal combustion engines in areas related to the improvement of automatic control systems for the fuel supply and combustion process;

In studies involving the use of alternative fuels such as ethanol or methanol, the problem of mixing ethanol, methanol and gasoline or ethanol, methanol and diesel fuel is clearly evident;

The more than century-old problem associated with the accepted mechanical system of converting linear motion into rotational motion is not considered or is considered in local aspects that do not have a fundamental significance for solving the problem as a whole, namely, mechanical problems eat up 50% of the efficiency of any internal combustion engine;

Our creative community has submitted applications for inventions that solve a range of problems described above.

Everyone knows that both ethanol and methanol bring water into the mixture after mixing - ethanol more, methanol less, but its presence cannot be discounted and therefore the preparation of an emulsion becomes an extremely important process:

The problem of mixing ethanol and gasoline at filling stations is completely solved by means of an invention for which there is a prototype made for churning butter, but this same prototype can be used to present the idea and solution to the problem of mixing and turning the mixture into a stable emulsion, when mixing fuel components such as diesel fuel and various types of industrial alcohol, including glycerin;

ethanol and gasoline and many others, including those of inorganic origin; the application for this invention was filed last year, in March;

In addition to all the systems and methods of various automatic control systems known from publications, we propose a system for contactless control of the actual state of the fuel mixture, including the level of its saturation with air and the level and nature of foaming of the fuel mixture before its injection or supply to the high-pressure fuel pump, as is the case in diesel engines; the application for the invention was filed last year;

Our creative team proposed a solution to mechanical problems in all types of internal combustion engines by changing the design of the mechanism for converting linear motion into rotary motion, without any changes to the fuel system of the internal combustion engine; the application for the invention was filed in April last year;

All of the listed technologies can be applied if a number of fundamental conditions are met.

To ensure timely and complete combustion in a short period of time, the fuel must meet the following requirements:

- 1) have good pumping capability to ensure reliable operation of the high-pressure fuel pump (at an optimal viscosity of 2-6 mm<sup>2</sup>/s and a temperature of 20 °C); good low-temperature properties; absence of mechanical impurities and water;
- 2) ensure the necessary atomization, good mixture formation and evaporation; for this, the fuel must have an optimal viscosity and a certain fractional composition;
- 3) have the necessary flammability to ensure easy starting of a cold engine, smooth pressure build-up and complete smokeless combustion (these properties depend on the chemical and fractional composition of the fuel, as well as viscosity; the chemical composition of the fuel is assessed by the methane number, which characterizes flammability and is the main indicator of the motor properties of the fuel);



4) do not cause increased formation of carbon deposits and other deposits on valves, rings, pistons, coking of the spray needle (the tendency of fuel to form carbon deposits depends on the chemical and fractional composition, viscosity, content of mechanical impurities and water);

5) not contain corrosive products (the corrosive properties of fuel depend on the presence of mineral and organic acids, sulfur compounds and water);

### **List of references, patent and license materials:**

#### **Appendix 1**

**United States Patent Application**  
**Kind Code**

**20100243953**  
**A1**  
**September 30, 2010**

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Method of Dynamic Mixing of Fluids

#### **Abstract**

Methods are provided for achieving dynamic mixing of two or more fluid streams using a mixing device. The methods include providing at least two integrated concentric contours that are configured to simultaneously direct fluid flow and transform the kinetic energy level of the first and second fluid streams, and directing fluid flow through the at least two integrated concentric contours such that, in two adjacent contours, the first and second fluid streams are input in opposite directions. As a result, the physical effects acting on each stream of each contour are combined, increasing the kinetic energy of the mix and transforming the mix from a first kinetic energy level to a second kinetic energy level, where the second kinetic energy level is greater than the first kinetic energy level.

#### **Appendix 2**

**United States Patent Application**  
**Kind Code**

**20100281766**  
**A1**  
**November 11, 2010**

## Dynamic Mixing of Fluids

### Abstract

Methods, systems, and devices for preparation and activation of liquids and gaseous fuels are disclosed. Method of vortex cooling of compressed gas stream and water removing from air are disclosed.

### Appendix 3

**United States Patent Application**  
**Kind Code**

**20110030827**  
**A1**  
**February 10, 2011**

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FLUID COMPOSITE, DEVICE FOR PRODUCING THEREOF AND SYSTEM  
OF USE

### Abstract

The current disclosure relates to a new fluid composite, a device for producing the fluid composite, and a method of production therewith, and more specifically a fluid composite made of a fuel and its oxidant for burning as part of different systems such as fuel burners, where the fluid composite after a stage of intense molecular between a controlled flow of a liquid such as fuel and a faster flow of compressed highly directional gas such as air results in the creation of a three dimensional matrix of small hallow spheres each made of a layer of fuel around a volume of pressurized gas. In an alternate embodiment, external conditions such as inline pressure warps the spherical cells into a network of oblong shape cells where pressurized air is used as part of the combustion process. In yet another illustration, additional gas such as air is added via a second inlet to increase the proportion of oxidant to carburant as part of the mixture.

### Appendix 4

**United States Patent Application**  
**Kind Code**

**20110048353**  
**A1**  
**March 3, 2011**

## Engine with Integrated Mixing Technology

### Abstract

The present disclosure generally relates to an engine with an integrated mixing of fluids device and associated technology for improvement of the efficiency of the engine, and more specifically to an engine equipped with a fuel mixing device for improvement of the overall properties by inline oxygenation of the liquid, a change in property of the liquid such as cooling form improved combustion, or the use of re-circulation of exhaust from the engine to further improve engine efficiency and reduce unwanted emissions.

### Appendix 5

**United States Patent Application**

**20120085428**

**Kind Code**

**A1**

**April 12, 2012**

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## EMULSION, APPARATUS, SYSTEM AND METHOD FOR DYNAMIC PREPARATION

### Abstract

The invention relates to a fluid composite, a device for producing the fluid composite, and a system for producing an aerated fluid composite therewith, and more specifically a fluid composite made of a fuel and its oxidant for burning as part of different systems such as fuel burners or combustion chambers and the like. The invention also relates to an emulsion, an apparatus for producing an emulsion, a system for producing an emulsion with the apparatus for producing the emulsion, a method for producing a dynamic preparation with the emulsion, and more specifically to a new type of a stable liquid/liquid emulsion in the field of colloidal chemistry, such as a water/fuel or fuel/fuel emulsion for all spheres of industry.

### Appendix 6

**United States Patent Application**

**20120103306**

**Kind Code**

**A1**

**May 3, 2012**

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## ENGINE WITH INTEGRATED MIXING TECHNOLOGY

### Abstract

The present disclosure generally relates to an engine with an integrated mixing of fluids (gas or liquid) device and associated technology for improvement of the efficiency of the engine, and more specifically to an engine equipped with a fuel mixing device for improvement of the overall properties of the system with an engine by either inline oxygenation of the liquid or dynamic activation of a fuel with a secondary fluid such as water resulting in a change in property of the input fluid to help with burning ratios, cooling for improved combustion, or the use of re-circulation of exhaust from the engine to further improve engine efficiency and reduce/recycle unwanted emissions or combustion releases such as water.

Appendix 7

**United States Patent Application**

**20140232021**

**Kind Code**

**A1**

**August 21, 2014**

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## FLUID COMPOSITE, DEVICE FOR PRODUCING THEREOF AND SYSTEM OF USE

### Abstract

The current disclosure relates to a new fluid composite, a device for producing the fluid composite, and a method of production therewith, and more specifically a fluid composite made of a fuel and its oxidant for burning as part of different systems such as fuel burners, where the fluid composite after a stage of intense molecular between a controlled flow of a liquid such as fuel and a faster flow of compressed highly directional gas such as air results in the creation of a three dimensional matrix of small hallow spheres each made of a layer of fuel around a volume of pressurized gas. In an alternate embodiment, external conditions such as inline pressure warps the spherical cells into a network of oblong shape cells where pressurized air is used as part of the combustion process. In yet another illustration, additional gas such as air is added via a second inlet to increase the proportion of oxidant to carburant as part of the mixture.

