Journal of
Electrical & Electronic Systems

Metina, J Electr Electron Syst 2016, 5:3
DOI: 10.4172/2332-0796.1000197

Research Article Open Access

# Cryogenic Train Levitation

**Faouzi Metina***

*Faculty of Physics, Department of Electronics, Polytechnic School National, University of Science and Technology – Houari Boumediene, Algeria*

**Abstract**

The trains in the last years are developed by three countries: Germany in 1993 Tr-07 has 279.6 mph, China in 2003 Trans rapid SMT has 295.7 mph, and Japan in 2015 L0 with 374.6 mph, this type of train under the name of maglev but in our project while speaking on the type of Mag surfing. The mag surfing is based on the phenomenon of superconductivity and energy of environment.

The CTL (Cryogenic train levitation) is more quickly than the maglev because estimated speed: 807.7 mph and the cost estimated at 6 million dollars for the 0.6 mile and 60 travellers in each train, after 100 times of voyage to recover the sum of investment of it, if the ticket 10$, therefore is less expensive than the maglev. Moreover, contains new technologies and all the systems are automatic and tele-control, rails CTL is exploit by all: on ground, underground, submarine. Speed 807.7 mph is adaptable by the travellers because we not forced the train but we are limited the frictions and drag and the use of the micro-lattice for the manufacture of body of train to ensure lightness.

**Keywords:** Diphasic mechanics of the fluids; Shape-memory alloy; Nanotechnology; Phenomenon of superconductivity; Energy of environment; Technology of graphene; Artificial intelligence

## Introduction

In our world transport is based on four means of transport, the boats, the planes, the cars and the trains… The trains in the last years are developed by three countries: Germany in 1993 Tr-07 has 279.6 mph, China in 2003 Transrapid SMT has 295.7 mph, and Japan in 2015 L0 with 374.6 mph, this type of train under the name of maglev but in our project while speaking on the type of Mag surfing. The mag surfing is based on the phenomenon of superconductivity and energy of environment.

The CTL (Cryogenic train levitation) is more quickly than the maglev because estimated speed: 807.7 mph and the cost estimated at 6 million dollars for the 0.6 mile and 60 travelers in each train, after 100 times of voyage to recover the sum of investment of it, if the ticket 10$, therefore is less expensive than the maglev. Moreover, contains new technologies and all the systems are automatic and tele-control, rails CTL is exploit by all: on ground, underground, submarine. Speed 807.7 mph is adaptable by the travellers because we not forced the train but we are limited the frictions and drag and the use of the micro-lattice for the manufacture of body of train to ensure lightness.

In our project all the system is the CTL which contains many elements (train; scoffs; system of lighting; system of control; system of starting; feeding system; system of safety; system of air-conditioning; system of distributions of the fluids by the diphasic Mechanics of the fluids; Shape Memory alloy; Nanotechnology; limps electronic of medical analysis and first aid; lamps LIFI; system multi-media; artificial Intelligence).

Finally, we can apply CTL project to the beginning in United States (the first nitrogen producer liquid in the world) on a large airport for example: International airport Hartsfield-Jackson of Atlanta [1-3].

**Note:** +807.7 mph is a dangerous speed for the biological clock of travellers in the long term (Figure 1).

## Roles

All systems and materials working in nanotechnology and the concepts of quantum physics; there are a variety of ways to deliberately make materials at the nanometre scale to take advantage of their improved properties such as higher strength, lighter weight, greater control of the light spectrum, and greater responsiveness chemical as their larger counterparts.

## CTL scoffs

To transport the train is cylindrical with the turn of train, bellow: there is platform liking (NSN: iron + Boron) to ensure stability of train and in top: one a large coil to create electric Wireless by a magnetic field and the with dimensions' ones in worm anti balls to limit the frictions of the air and more safety.

## CTL train

**Feeding system:** To supply the machines in the train placing of it a principal coil at the ceiling of rail and a secondary coil at the ceiling of train to create a magnetic field to transport electricity by electric Wireless, the beginning of system is a circuit of production and transformer at the secondary end of coil.

**System of control:** In science there are things which cannot be understood or explained with logic and for this reason, we use the theories of our proposal is to help us to explain scientific phenomena and to facilitate the access to the correct results of the practical applications such as the quantum physics which will help us to clarify the work of the human eye to supervise the light and the movement of the electrons. we can put the following relation: R=L/t (relation for the internal resistance of the coil) but we apply this relation to a new electronic component (we to call: ENGINE) which to use like push buttons and switches in the tables and control boxes of the system of control, this electronic component is to build by a frame of glass

***Corresponding author:** Faouzi Metina, Faculty of Physics, Department of Electronics, Polytechnic School National, University of Science and Technology – Houari Boumediene, Algeria, Tel: +213557782646; E-mail: faouzi.metina@gmail.com

**Received** August 25, 2016; **Accepted** September 13, 2016; **Published** September 20, 2016

**Citation:** Metina F (2016) Cryogenic Train Levitation. J Electr Electron Syst 5: 197. doi: 10.4172/2332-0796.1000197

**Copyright:** © 2016 Metina F. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

which to fill by liquid nitrogen in only one side to make run drop by drop towards the other side is to submerge a Nitinol fiber shriveled crossed small a ceramics nanotube in the medium. In this case ceramic nanotube will be to it a superconductor and nitinol fiber extends thanks to the phenomenon Shape memory alloys to play the role of a coil and the switching time between the two sides in fact the time used in the preceding relation.

We use an extended nitinol fiber to the initial state for resistance is as that creates of it a coil and resistance programmable according to time (Figure 2).

**System of starting:** To start the CTL, there are two tanks, first tank is piled up again by liquid nitrogen with -200°C and the second tank empty reserve in bottom of train. The two tanks are Dewar Stainless steel isolated from temperature with a hydraulic engine with two directions of flow. The platform of train in ceramic to carry out the phenomenon of superconductivity.

**System of acceleration:** Compressor: primary education at the beginning and secondary at the end of train with air Bearings for control the speed of CTL, because the nitrogen superconductivity is not sufficient to improve acceleration of CTL because of weight of the travellers and luggage. Moreover; one to use the movement taken entered of the air blast of compressor with alternator for produces power electric and stored on batteries in parallel of the batteries of food. With an insulator of noise enters the systems and the cabins of the travellers.

**System of safety:** To ensure passenger safety in place fire sensors, temperature, movement, distance, monitoring of the camera and secure remote monitoring system against hackers.

**Figure 1:** Image of Cryogenic train levitation.

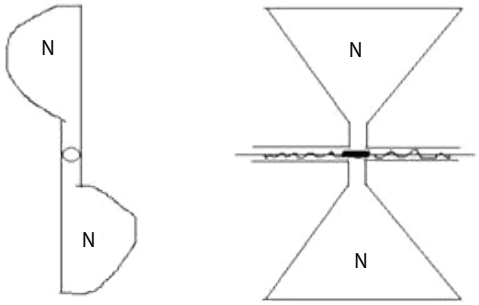


**Figure 2:** Technical drawing of ENGINE (new electronic component).

**Apparatus of diagnosis:** Limp electronic of medical analysis and first aid in the event of urgency contains infra-red Thermometer Duo Scan, Kit parts spare for stethoscope, automatic Tensioner with arm MICROLIFE LP A100, Monitor of Transport, Lector of glycaemia and blood Analyzer.

**System of lighting:** For the lighting of train placing lamps LIFI of them in the medium of the small reels to ensure a good high lighting plus connection quality and reliable network of telecommunication enter the admin and the operating system of train.

**System of air-conditioning:** Contains a gas tank (e.g. R22a) for fact air-conditioning and the heating. The tank gas to place under the first tank of nitrogen and concluded a system from cooling and the gas to transport with nitrogen by a system of distributions of the fluids by the diphasic Mechanics of the fluids.

**Multi-media system:** To inform the travelers with the situation of train (e.g. temperature, hour, date) a screen of posting and baffles Wi-Fi of indication with artificial intelligence mode.

### CTL station

It is a simple station, created an automatic opening in the good corner of tube of worm of rail. And the opening of the doors of train which Contains chairs all in the same direction to avoid the evil at ease position of the travelers. And end of voyage [4-6].

## The Format

Technical drawing of C.T.L. is given in Figure 3.

## The Study of the Project

It is the study of the project, which will be used to check the feasibility and the profitability of the project after the idea is fixed. Analysis of operation of project theoretically and to define the means necessary to reach that point. This study generally requires the following stages:

### Technical study

The purpose of the study technical of the project is to provide precise and practical answers to the questions: Of what consists produces it? How will it be produced? Which are the means necessary to carry out a competitive product as for the quality and at the cost price?

### Innovation

The innovation in the broad sense corresponds to a new strategy of development adapted to a market and associated a taking risk. The technological innovation and the innovation of services function according to the same principle: to obtain or maintain an advance and a competitive advantage thanks to the creation of added value. One being able to generate the other. For a technological innovation, the principal barrier is obtained by a major effort in research development. The technological contents are of primary importance and the project frequently leads to the deposit of a patent or the acquisition of pointed competences. But technology is not enough. It is also necessary to take into account, from the very start of the project, quality, the design and more.

### Feasibility study

The Feasibility study in project management is a study which attempts to check that the project is technically feasible. From a broader point of view. This study is based on a consultation of the potential project superintendents, the comparison of the technical proposals.

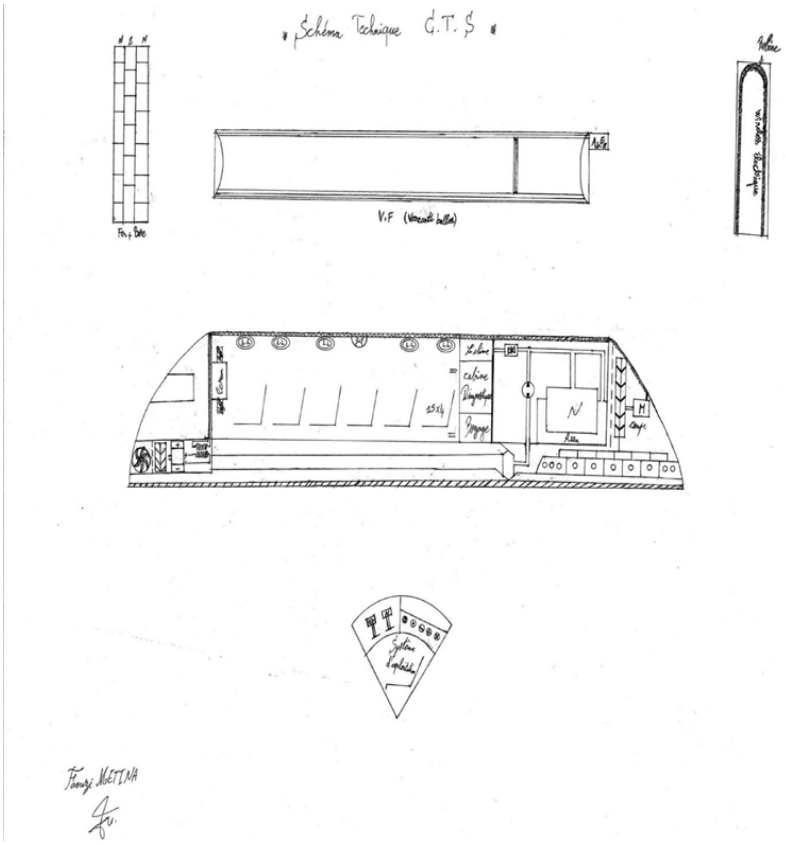


**Figure 3:** Technical drawing of C.T.L.

## Technical study

According to quantum Physics and the Phenomenon of superconductivity which based on the Superconductor, one can produce the fastest tool for the transport.

**Of what consists produces it?**

Length, width, height and weight of train:

Overall length: 1771.6 inch,

Total width: 90.5 inch,

Width of the corridor: 24.8 inch,

Height of the floor: 13.7 inch,

Weight of the vehicle: 44092.5 pound,

Maximum speed: 807.7 mph.

**How will it be produced?**

All depends on the size of the system and materials used. Typically, for a superconductor of 0.98 inch size, you can levitate thin liking 0.24 inch in diameter.

The force of interaction is degraded very quickly with the distance, therefore it will not be possible to have the magnet with 1 m in levitation above the superconductor, unless the magnet is extremely weak compared to the superconductor.

The liquid volume of nitrogen is of no importance for the force. You have right need enough for liquid nitrogen to cool the superconductor,

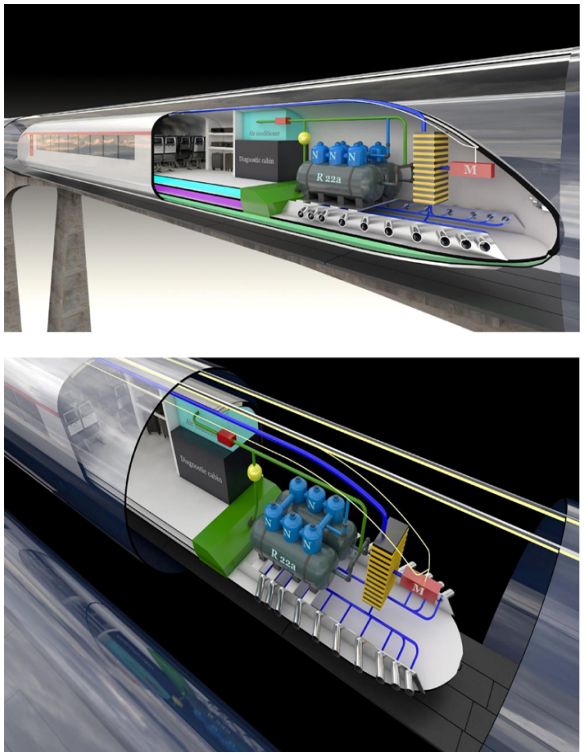

**Figure 4:** Modeling 3D of Cryogenic train levitation engine.

namely the superconductor must be completely immersed in the liquid of cooling.

The quantity of liquid nitrogen sufficient for completely immersed 0.98 inch of ceramic superconductor is 7.87 inch = 1.75 gallon for one yard. It is supposed that the train is raised by the volume of nitrogen sufficient.

For 1771.6 inch length of train, one is platform need for ceramics 1.96 inch in diameter and 1771.6 inch length plus one scoff at magnet 0.49 inch in diameter and 1771.6 inch length always, and liquid nitrogen 79.18 gallon in the tank to ensure the continuity of service.

**Which are the means necessary to carry out a competitive product as for the quality and at the cost price?**

The number of the traveler is large by contribution with the other train of approximate mechanism of us mechanism and even technology and to develop more than the other as electric Wireless is a Source of energy sufficient for supplies the engine of compressor and the room of exploitation; The microphone-lattice under the technology of Graphene for construction of train. And more flexible A of another uses and several places to realize because the tube is anti-ball and anti-pressure submarine [6-8].

## The Application

Modeling 3D of Cryogenic train levitation engine is given in Figures 4 and 5.

## Conclusion

Thanks to this project, we are familiarized with a very significant field in technology of transport, although knowledge and the concepts acquired up to now are only surface, we could include/understand and look further into the operation of the CTL.

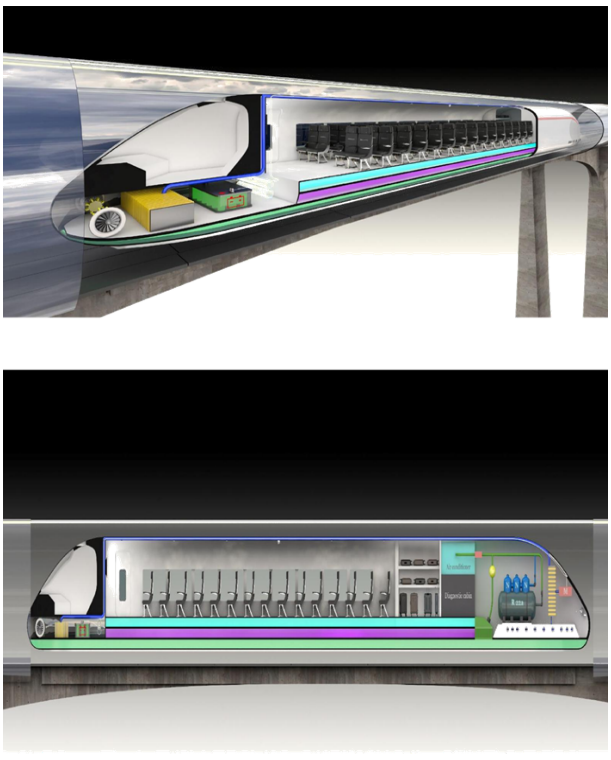

**Figure 5:** Modeling 3D of Cryogenic train levitation.

Then, concerning the field of exploitation:

- Maintenance becomes a little more complicated, seen the miniaturization of the circuits used, of new personal means and materials are necessary.
- Need for a broader knowledge in cryogenics, treatment of software gas and handling for the engineer of exploitation.

In technology of CTL integration has three principal aims:

- Reduced cost.
- Functionalities.
- Respectful of the environment.
- Space reduced.

Lastly, we hope that this document can be a basic working tool.

### References

1. Al-Jazari, Ibn al-Razzaz (1974) The Book of Knowledge of Ingenious Mechanical Devices. D. Reidel Publishing Company Dordrecht-Holland/Boston-U.S.A.
2. Tesla N (1893) On Light and Other High Frequency Phenomena. Philadelphia.
3. Onnes HK (1894) On the Cryogenic Laboratory at Leyden and on the Production of Very Low Temperature. Comm Phys Lab Univ Leiden.
4. Drexler E (1986) Engines of Creation: The Coming Era of Nanotechnology. Doubleday.
5. Planck M (1914) The Theory of Heat Radiation. Philadelphia P. Blakiston's Son & Co. 1012 Walnut Street.
6. Dirac P (1930) The Principles of Quantum Mechanics. Oxford Clarendon Press.
7. Feynman RP (1961) The theory of fundamental processes. Addison-Wesley.
8. Banu Musa bin Shákir (1979) The book of ingenious devices (Kitāb al-ḥiyal).