# Title of the project: Cashless Napkin Vending Machine

*(F. No. 11/10/2015-NEB (G)/01 dated 27/09/2017)*

| Outcome in terms of product/process development | Current Status<br><br>Patent filled (if not filed, then authorized reason), | Socially and Economically Relevance |
|---|---|---|
| 1) Sanitary Napkin Vending Machine with cashless facility using Digital Wallet like Paytm and BHIM UPI. Prototype is developed and validated the operation of the vending machine using Paytm successfully.<br>2) It is also supported with Coin acceptor, a standby mode in case of network failure<br>3) Finished product development is under progress<br>4) Product will be the contribution to the Women empowerment, cashless India and Digital India campaign<br>5) Product will be useful for Female of above 13 year Age which will fulfill the need in emergency | Indian Patent Filed Application No. 201821004599 | 1) The finished Product can be used at Shopping Malls, Hostels, Public toilets etc.<br>2) Since it is like any time vending machine any one can use it whenever she needs it.<br>3) It can be available at price affordable to the end user.<br>4) Make free from view of the stigma and social taboo associated with/sanitary napkins, majority of the girls/women does not feel embarrassed and hesitate to go to the commonly known.<br>5) Increase in usage of cashless payment platforms to ensure participation in Digital India Mission<br>6) With the above aspects the machine will play vital role in contribution to Digital India and Cashless India campaign launched by the Government of India.<br>7) It will be significant contribution to Women Healthcare and Sanitation. |

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# Title of the project: Virtualization by Integrated Lightweight Development Tool (VILD) For Multimedia Applications

*(F.No. 11/10/2015-NEB(G)/02 dated 27/09/2017)*

| Outcome in terms of product/process development | Current Status<br><br>Patent filled (if not filed, then authorized reason), | Socially and Economically Relevance |
|---|---|---|
| • So our solution is to build the tool to create the virtual world that is our platform VILD (virtualization by integrated lightweight development tool).<br>• We will be creating this tool based on JavaScript so it doesn't even require any type special compiler to compile our platform it could be easily run in the web browser.<br>• This platform could use in the HTML so it makes as easy to write a web page code to create the virtual reality stuff.<br>• The entire VR products based on the traditional system have a huge size. e.g. :( the mesh of a cube) it have its file size approx. in megabytes but as we are creating the virtualization of virtualization it's going to make the size really very small. | Indian Patent has been Filed<br><br>(Application No. awaited) | • VR is immersive, putting users in the middle of the action, making them active participants rather than passive watchers.<br>• It because it feels like a real experience, bridging the gap between users and their digital avatars, early research suggests that VR has a deeper and more long-lasting psychological impact than other media.<br>• Thus far, VR games have captured much of the public and media attention.<br>• Instead of OpenGL ,IDE's,APK and Google API but using our platform we can easily implement our Virtual World. |

# Title of the project: Dry Turning of Duplex Stainless Steel (DSS 2205) using Carbide Tools

*(F. No. 11/10/2015-NEB (G)/03 dated 27/09/2017)*

| Outcome in terms of product/process development | Current Status Patent filled (if not filed, then authorized reason), | Socially and Economically Relevance |
|---|---|---|
| • **Optimized cutting parameter:** Cutting forces and residual stresses are the measuring parameters which affects the tool life of insert and the fatigue life of Duplex stainless steel. When the cutting parameters are not selected properly the cutting tool wears quickly and get broken abruptly. It increases the machining cost of component. So by optimizing the parameters of machining like cutting speed, feed and depth of cut it is going to increase the tool life of insert, fatigue life of DSS and also increases corrosion resistance of material.<br>• **Reduction in pollution and hazardous effect:** The cutting fluid used in metal cutting industries represents 16-20% of the manufacturing cost and have several negative health and environmental impact. Green or dry machining is desirable for clean, safe and cost effective process which minimizes the ill effect of cutting fluid and lubricants. Due to the absence of coolant, dry turning is environment friendly and clean machining process.<br>• **Increase productivity and life of component:** By choosing hard cutting tool material, tool with surface coating and selecting appropriate cutting conditions tool life of insert is increases which increase productivity. By optimizing cutting parameters which gives us higher compressive residual stresses and less cutting forces we can increase the life of component. | Indian Patent has been Filed (Application No. awaited) | **Social Relevance**<br>• Changing machining conditions to improved climate conditions- By implementing Green machining over wet machining the use of cutting fluids and lubricant is eliminated. Due to eliminating use of the cutting fluid pollution is reduces and also the hazardous effect on the health of the operator is reduces.<br>**Economical Relevance:**<br>• Use of Duplex Stainless Steel over 300 series austenite stainless steel will reduces the material cost, increases strength of material, increases surface roughness and fatigue life which will increase service life of component. |

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सत्यमेव जयते
Department of Science and Technology
Ministry of Science of Technology
Government of India

## Title of the project: Double pole Electromagnetic Engine

*(F. No. 11/10/2015-NEB (G)/04 dated 27/09/2017)*

| Technical Outcome year wise | | | |
|---|---|---|---|
| **Title of the project** | **Outcome in terms of product/process development** | **Current Status Patent filled (if not filed, then authorized reason),** | **Socially and Economically Relevance** |
| Double pole Electromagnetic Engine | • An electric engine vehicle is a great way for you, as a consumer, to save a lot of money on gas. However, there are so many different reasons why you should invest in an electric car in the modern day of technology.<br>• **GREEN TECHNOLOGY**: ELECTRIC VEHICLES are entirely charged by the electricity you provide, meaning you don't need to buy any gas ever again. Driving fuel based cars can burn a hole in your pocket as prices of fuel have gone all time high? With Electric vehicles, this cost can be avoided. Though electricity isn't free, an electric vehicle is far cheaper to run.<br>• **POLLUTION:** Electric vehicles are 100 percent eco-friendly as they run on electrically powered | Indian Patent has been Filed (Application No. 201821012144) | **Social Relevance:**<br>For almost 100 years, we've relied on internal combustion engines as the primary means to move our cars. In that time, engine technology has advanced but problems like pollution and noise persist. Below are some of the potential social impacts from shifting to Electric vehicles.<br>• **Urban air quality: -** Electric vehicles produce little or no tailpipe emissions, which helps improve urban air quality. Despite improvements, New York City still fails to meet Federal standards for ozone levels. Unlike regular cars, electric vehicles create little or no local ozone emissions.<br>• **Carbon Emissions: -** When recharged |

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## Title of the project: Double pole Electromagnetic Engine

*(F. No. 11/10/2015-NEB (G)/04 dated 27/09/2017)*

engines. It does not emit toxic gases or smoke in the environment as it runs on clean energy source. They are even better than hybrid cars as hybrids running on gas produce emissions. You'll be contributing to a healthy and green climate.

- **POPULARITY:** EV's are growing in popularity. With popularity comes all new types of cars being put on the market that are each unique, providing you with a wealth of choices moving forward.
- **SAFETY:** Electric vehicles undergo same fitness and testing procedures test as other fuel powered cars. In case an accident occurs, one can expect airbags to open up and electricity supply to cut from battery. This can prevent you and other passengers in the car from serious injuries.
- **RECYCLING:** As the old IC Engine can be replaced by DPE-MAG Engine, the cost for purchasing a motorized vehicle can be avoided.

from the electric grid in New York City, Electric vehicles lead to carbon emissions at power plants that supply the city. As of 2007, this amount was about 0.55 lbs of CO2e per mile. This is lower than almost any other vehicle on the road.

- **Oil independence:** Electric vehicles would dramatically reduce that amount, as the energy sources for India are primarily natural gas, hydropower, nuclear, and increasingly, renewables.
- **Urban noise:** Because they lack pounding pistons they reduce vehicle noise, especially at city speeds.
- **Urban heat:** Only about 15% of the energy in gasoline gets converted into motion. Much of the rest is lost as waste heat-one of the reasons it's sometimes possible to fry an egg on the hood of a car. Electric vehicles use the energy in their batteries much more efficiently and create less heat, welcome news for pedestrians walking next to a grid locked street.

**Economic Relevance:**

- Electric vehicles have been competing with the internal combustion engine for more than a

## Title of the project: Double pole Electromagnetic Engine

*(F. No. 11/10/2015-NEB (G)/04 dated 27/09/2017)*

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| | | | century, and they have never won. Batteries are more expensive, have less range, and require more time to recharge than it takes to fill a gas tank.<br>• The model shows that the plug-in electric engine market is both economically and financially viable. However, the economic and financial returns accrue over the longer term. The move towards a plug-in electric vehicle market also generates large savings in greenhouse gas and air pollution emissions.<br>• In the short term there is Economic Viability of Electric Vehicles increased uptake of alternative engine configurations in the small vehicle category. As vehicle prices fall, the vehicle range increases and more charging infrastructure becomes available, owners of larger vehicles and vehicles that travel large distances tend to purchase a higher proportion of EVs.<br>• This is due to the fact that operating costs are more important for these vehicle owners. Higher levels of charging infrastructure (as represented in the different scenarios) significantly increase the take-up of plug-in electric vehicles and hence increase the viability of the market. |

# Title of the project: NIVAARA –Redefined Housing

*(F. No. 11/10/2015-NEB (G)/05 dated 27/09/2017)*

| Technical Outcome year wise | | | |
|---|---|---|---|
| **Title of the project** | **Outcome in terms of product/process development** | **Current Status Patent filled (if not filed, then authorized reason),** | **Socially and Economically Relevance** |
| NIVAARA – Redefined Housing | • People will get more sophisticated solution with minimum space requirement for the time being during the periods of Natural/Manmade Disasters.<br>• Economy can be achieved with all amenities at minimal cost<br>• A new Semi-Permanent housing industry will be commenced which will revolutionize the way people live in disaster relief camps.<br>• Nivaara as being a prefabricated structure which is easy to transport and install. | Indian Patent has been Filed (Application No. awaited) | **Social Relevance**<br>• The Mass Housing problem after natural or manmade calamity will be solved.<br>• All Social quotients are taken into consideration while implementing NIVAARA.<br>• NIVAARA aids in minimizing the Environmental degradation Post Disaster by giving systematic housing and waste collection system.<br><br>**Economical Relevance**<br>• It's semi-permanent mass housing scheme which will reduce the cost of living in affected area.<br>• Also NIVAARA will provide commercial space for small Vendors to sustainable living for the near Future.<br>• Government/NGO's would be benefited over a long term as NIVAARA is reusable and can be transported quickly for further use |

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