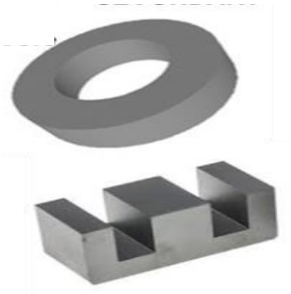
BCSIR Laboratories Dhaka, BCSIR

Product Name	**Transformer Core using soft Ferrite material**
Area	Power Sector, Instruments, Appliances etc.
Uses	Stepping Up or Down Voltage and Current



Transformer Core

Low cost transformer core has been developed using soft ferrite material. Mn-Ni-Zn ferrite represents the important class of magnetic materials. This combination of magnetic and electrical properties makes this ferrite useful in many technological applications, such as inductor cores, transformer cores, convertors, magnetic heads, electromagnetic wave absorbers etc. This material owns highest Curie temperature of 498° K and the Transformer core possesses high quality factor (Q) over a wide frequency range.

Major Raw Material	Oxides of Manganese, Nickel, Zinc and Ferric
Major Plant Equipment/Machinery	Grinding machine (Ball mill), Mixing Vat, Forming machine (300-1300^{o}), Weighing machine and other property checking instruments (for laboratory)
Details of specific application	This product is mainly used in Transformer to transmit and distribute power as well as in household appliances and laboratory instruments.
Status of Development	This process is accepted by the BCSIR authority.
Ecological/Environmental Impact (if any, specify briefly)	This process is environment friendly and after commercialization this product able to fulfill our national demand.
Techno-Economics	Available on demand
Cost of product	15 Tk/pc (100 gm/pc)
Contact Address	Industrial Physics Division, BCSIR Dhaka Laboratories

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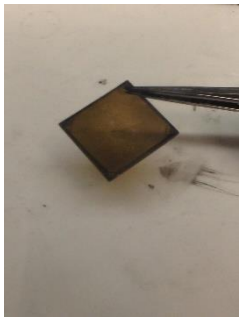
Product Name	Portable Rechargeable Spin Coater
Area	Laboratory, Industry
Uses	Depositing layer of thin film

Spin Coater



Spin Coated thin film

Thin-film technology attracts substantial attention in the field of materials science and semiconductor processing because of its low-cost fabrication setup usage. Thin-film based solar cells, LEDs, and conducting and semiconducting layers have been deposited by various methods such as molecular beam epitaxy (MBE), physical vapor deposition (PVD), electron beam evaporation, thermal evaporation, sol-gel, chemical vapor deposition (CVD), chemical bath deposition (CBD), spin coating deposition etc. Among the different techniques, spin coating is popular because of its capability of large area deposition, production of compact, coherent and adherent film, low processing temperature and more importantly flexibility in the selection of any kind of substrate. Traditional spin coater uses a powerful vacuum pump to suck the substrate and sophisticated motors to rotate the substrate which ultimately increases its production cost.

Major Raw Material	MS-sheet, Tube (PVC), Cover (Acrylic), Brass break knob, Screw key knob, Spinner box (Teflon), Spinner SH gripper (Variable), Spinner SH gripper (Fixed), Screw, Switches and Cables LCD (16x4) display, Electronic circuitry for Dual power (AC/DC), Rechargeable Li-ion Battery, BLDC motor
Major Plant Equipment/Machinery	Lathe machine, Shaper machine, Vertical drill saw, Hand drill, Angle grinder, Drill set (top), Hand band saw (sheet cutter), Manual bending machine
Details of specific application	This product is mainly used to deposit layer of thin film on substrate which can be glass, steel etc. Coating material is dropped on the substrate which is spun in a specific speed to coat the sample surface homogenously and uniformly by utilizing the centrifugal force of the spinner.
Status of Development	This process is accepted by the BCSIR authority.
Ecological/Environmental Impact (if any, specify briefly)	Environment friendly and after commercialization this product able to fulfill our national demand.
Techno-Economics	Available on demand
Cost of product	50,000 Tk/pc

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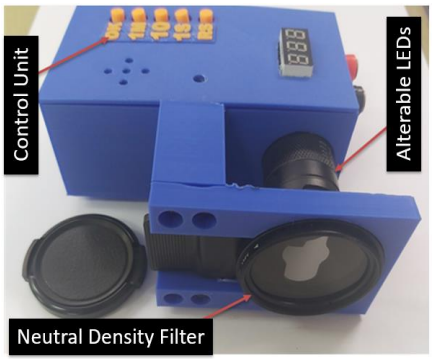
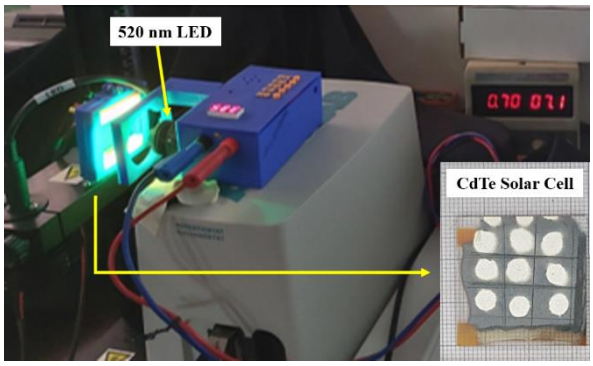
Product Name	**Light source with variable intensities and illumination periods using alterable LED wavelengths**
Area	Laboratory, Industry
Uses	Photophysical and Photochemical property analysis





Light Source **Use of Light Source**

A versatile light source contains a great value in the field of research and analysis. For example, lights of different color are used to measure the quality of different layers of a solar panel. The overall performance characteristics and efficiency can also be measured by light. At present time researchers are working relentlessly to produce hydrogen which could be a replacement of fossil fuel by splitting water using solar panel. To conduct this type of research the requirement of a light source is inevitable. Dyes used in textile industries affect environment in multiple ways such as compromising the quality of water bodies, inhibiting plant growth, promoting toxicity, impairing photosynthesis etc. To analyze the characteristics and degradation of these dyes photocatalysts are used. Light is required to work with these photocatalysts. In short, where any photophysical or photochemical property is to be found out, light is an absolute necessity there. Conventional light sources used for these types of researches have lots of limitations. For example a broadband Xenon arc lamp is costly, requires cumbersome operation and maintenance, need expensive filter, cannot produce variable intensity light or periodic illumination, heavy to work with and so difficult to change orientation. Moreover these types of light sources are limited to specific applications. The developed light source would be portable, consume low power, easy to change orientation in experimental setup, and mostimportantly can be used in any type of research where illumination on certain apparatus or sample is required.

Major Raw Material	AVR 328P Microcontroller, LED, 5 Volt relay, Diodes, Resistors, Capacitors, Voltage regulator IC (7805), PCB, Connectors etc.
Major Plant Equipment/Machinery	3D Printer, Hand drill
Details of specific application	This product is mainly used to investigate photophysical and hotochemical properties of any photoactive material.
Status of Development	This process is accepted by the BCSIR authority.
Ecological/Environmental Impact (if any, specify briefly)	This process is environment friendly and after commercialization this product able to fulfill our national demand.
Techno-Economics	Available on demand
Cost of product	9200 Tk/pc
Contact Address	Industrial Physics Division, BCSIR Dhaka Laboratories

BCSIR Laboratories Dhaka, BCSIR

Product Name **Domestic Oven**

Major Raw Materials	Aluminum Sheet
Application	Without any extra fuel system, you can make your choice of **cakes, biscuits, pudding, bread, bunny, patties, roasted** and other delicious meals, in a healthier way. Uses of it are very safe and durable.
Usage	In the new condition, to remove the odor from the inside of the oven, put a small amount of gas stove in the lid, and cover the lid for 2 hours and take 1 hour of heat for the lid. You can control the heat by observing the oven with triangular hole. Do not raise the oven as soon as the blaze rings around the burner. It has been found that under this condition the temperature of 350-450 degrees Fahrenheit (175-232 degrees Celsius) is generated in the oven.
Advantages	A gas oven gives you greater control over your cooking temperature. Warm-up time is less with gas. Once you turn off the oven, cooking stops almost immediately. The instant on-off feature with gas cooking gives you complete freedom in good cooking. With electricity you need to allow some time for the oven to cool down. Some dishes may be affected by the prolonged high temperatures. Natural gas also cooks food more evenly than electricity. Gas ovens will give you better results in cooking
Patent Details	**Bangladesh Patent No. 1002228(1989)**
Commercialization Status	Ready for Commercialization
Precaution	To make any type of food it is necessary to keep the ignition of the stove gentle. If heat becomes high the food can be burnt and the oven is likely to be damaged. The oven lid should not be open until the food is ready. Use handle cloth while holding hot hen. Clean the inside of the oven sometimes
Techno-Economics	Available on demand
Ecological/Encironmental Impact	It has no adverse effect on the environment
Keywords	Domestic, Food, Natural

BCSIR Laboratories Dhaka, BCSIR

Digital Water Bath

UsesTo incubate samples in water at a constant temperature over a long period of time.

Features Provide greater temperature uniformity, control and stability. Working temperature range from Room Temperature to 100 °C

- Four holes.
- Heater: 2 kW
- Temperature stability of ± 0.2 °C
- Capacity: 8 liters

Scale of Development	The product is standardized at Bench scale.
Major Raw Materials	Stainless steel sheet, Thermocouple, IC, Relay, Heater etc
Major Plant Equipment	Lathe machine, Sheet cutter, Circuit board plotter.
Specific Application	❖ Typically used during incubation in microbiological laboratory work. ❖ Warming Reagents/ Routine Laboratory applications ❖ Bacteriological Examinations ❖ Cell cultivation
Status of Development	It is developed and tested.
Environmental impact	Process is environment friendly.
Commercialization Status	Ready for commercialization
Price (per Unit)	45,000/- (Forty five thousand taka only)
Key words	Water bath, temperature, heater, sample