



ST. ALOYSIUS' COLLEGE

AUTONOMOUS
JABALPUR- 482001
MADHYA PRADESH, INDIA

CRITERION-7

INSTITUTIONAL VALUES AND BEST PRACTICES

Key Indicator – 7.1

Institutional Values and Social Responsibilities



Metric No.: 7.1.2

Environmental Consciousness and Sustainability



Document Name

Sensor-based Energy Conservation





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(AUTONOMOUS), JABALPUR(M.P.)

Reaccredited 'A+' Grade by NAAC (CGPA 3.68/4.00)

College with Potential for Excellence (CPE) by UGC

DST-FIST Supported & Star College Scheme by DBT.

Environmental Consciousness and Sustainability

7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures

Sensor-based Energy Conservation

Sensor-based bulbs installed in washrooms and corridors significantly contribute to energy conservation.

Automatic on of Sensor Lights in Dark Conditions



Ground Floor Corridor



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Google

Jabalpur, Madhya Pradesh, India

Penty Naka Sadar, Sadar Main Rd, Cantt, Jabalpur, Madhya Pradesh 482001, India

Lat 23.153464°

Long 79.953174°

02/07/24 11:48 AM GMT +05:30

GPS Map Camera

First Floor Corridor



ST. ALOYSIUS' COLLEGE

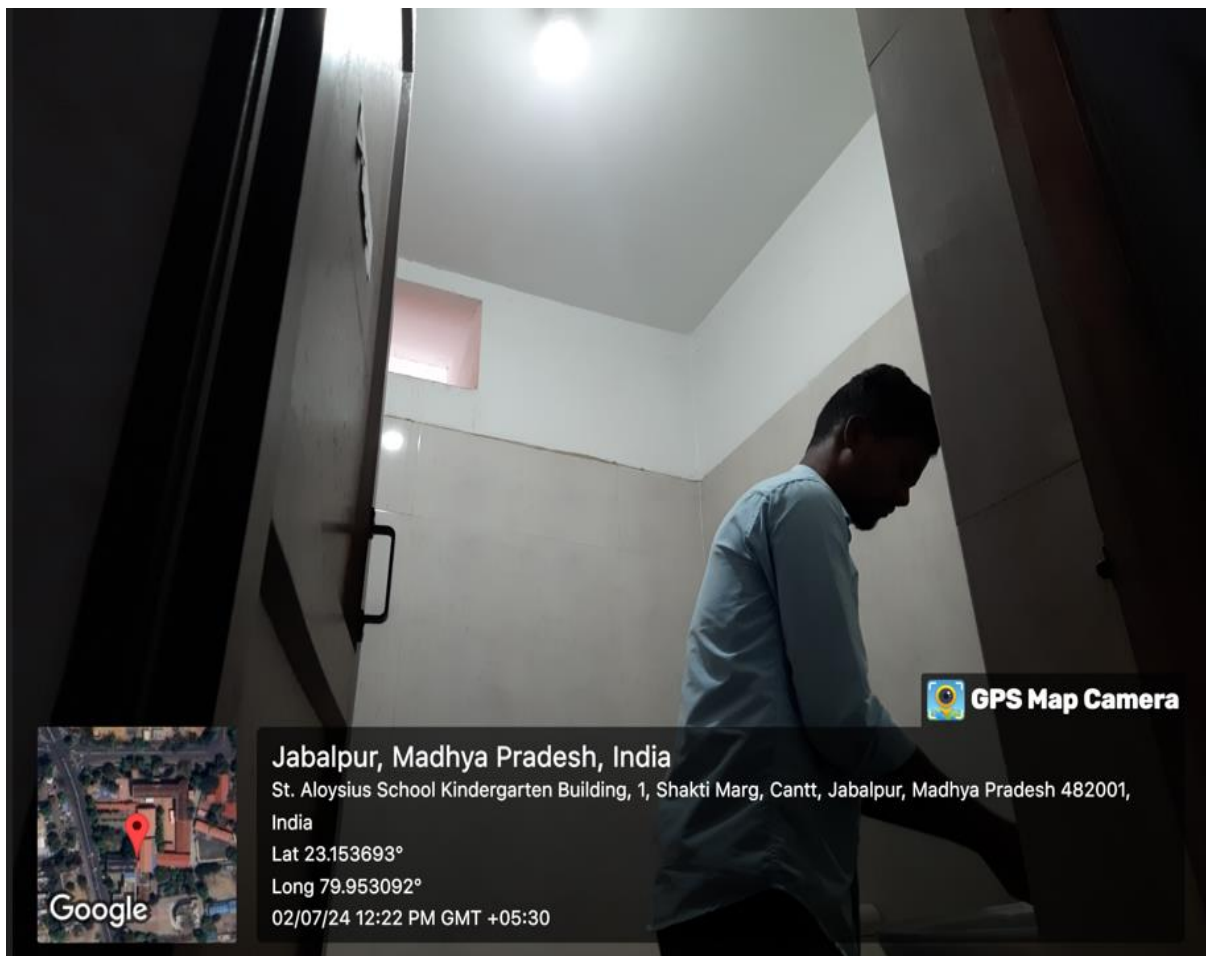
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Automatic on of Sensor Lights during STEP IN in WASHROOM





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Rechargeable Lights in classrooms





Instruments with Sensors

The sophisticated lab instruments equipped with temperature, pressure, and light sensors contribute to energy conservation by enabling efficient and targeted use of resources, minimizing energy wastage, and optimizing experimental conditions for sustainable research practices.

Deep Freezer with Temperature Sensor

Deep freezers with temperature sensors can precisely monitor and regulate the internal temperature. They adjust cooling power based on the sensed temperature, ensuring that the freezer operates only when necessary to maintain the desired temperature. This prevents overcooling and reduces energy consumption.





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REFRIGERATED CENTRIFUGE BASED ON TEMPERATURE SENSOR

A refrigerated centrifuge with a temperature sensor can contribute to energy conservation by optimizing cooling cycles, preventing overcooling, ensuring sample integrity, and operating efficiently. Refrigerated centrifuges with temperature sensors can precisely monitor and regulate the internal temperature of the centrifuge chamber. They adjust the cooling system based on the sensed temperature, ensuring that the chamber remains at the desired temperature for sample preservation or experimental conditions. This prevents overcooling and reduces unnecessary energy consumption.





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AUTOCLAVE WITH TEMPERATURE AND PRESSURE

SENSORS

Autoclaves are designed to heat up quickly and maintain stable temperatures during the sterilization process. This efficiency minimizes the time required for sterilization, reducing overall energy consumption. These systems ensure that the autoclave operates at the optimal temperature for sterilization, avoiding unnecessary energy usage.





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THERMOCYCLER (PCR) WITH TEMPERATURE SENSOR

A thermocycler can indeed be considered an energy-saving instrument compared to traditional thermocyclers that may run continuously for long periods. thermocyclers typically feature an automatic shut-off function once the PCR (polymerase chain reaction) process is complete. This means they consume energy only during the active cycling phases of PCR and not during idle periods.





XRD-X RAY DIFFRACTION WITH DETECTOR SENSOR

X-ray diffraction (XRD) is not typically considered an energy-conserving instrument in the same way that renewable energy technologies or energy-efficient appliances are. However, it can be viewed as relatively energy-efficient compared to certain other analytical techniques, particularly in the context of materials characterization and structural analysis. Its non-destructive nature, precision, versatility, and efficiency make it a relatively energy-efficient analytical technique for materials characterization and structural analysis.





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ORBITAL SHAKER WITH TEMPERATURE

Orbital shakers with programmable settings that allow users to customize shaking speed, duration, and temperature. By optimizing these parameters based on experimental needs, users can reduce unnecessary energy usage.



SONICATOR WITH SOUND SENSOR

Sonicators, also known as ultrasonic homogenizers or disruptors, are primarily utilized for sample preparation, cell disruption, and particle size reduction through the application of high-frequency sound waves.





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MAGNETIC STIRRER WITH HOT PLATE WITH TEMPERATURE SENSOR

Magnetic stirrer with hot plate -their efficient heating, precise temperature control, combination of functions, versatility, and safety features contribute to their overall energy conservation compared to alternative heating and stirring methods





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HEATING PLATE WITH TEMPERATURE SENSOR

Heating Plate due to their localized heating, precise temperature control, quick heating times, safety features, versatility, low maintenance requirements, and potential for renewable energy usage collectively contribute to their reputation as energy-conserving instruments for laboratory heating applications.

