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*Ask the right questions, and nature will open the door to her secrets
- Dr. C.V. Raman, The Nobel Prize in Physics 1930*

IIT Ropar Developed first-of-its kind Oxygen Rationing Device – AMLEX

Department of Biomedical Engineering, IIT Ropar developed a first-of-its kind Oxygen Rationing Device – AMLEX, which increases the life of medical oxygen cylinders three fold and supplies the required volume of oxygen to the patient during inhalation and trips when the patient exhales CO₂. This way the device AMLEX saves oxygen which otherwise unnecessarily get wasted. The device AMLEX can also operate on both portable power supply (battery) as well as line supply (220V-50Hz) and it works with any commercially available oxygen therapy masks having multiple openings for air flow.

Researchers & Scientists at IISER Kolkata & IIT Kharahpur Discovered Materials that Self-Repair Mechanical Damages

Researchers & scientists at the Indian Institute of Science Education and Research (IISER) Kolkata & IIT Kharahpur have developed Piezoelectric Molecular Crystals, which is called bipyrazole organic crystals, a material that repair themselves from mechanical damages without need for any external intervention in milliseconds with crystallographic precision. The material may find application in high-end micro-chips, high precision mechanical sensors, and may lead to the development of smart gadgets that self-repair cracks or scratches.

Indian Startup Developed Affordable and Dual Powered Defibrillator

India based Startup Jeevtronics Pvt. Ltd, which has been funded by Department of Biotechnology, GoI and Biotechnology Industry Research Assistance Council (BIRAC) developed an affordable, low-weight and hand-cranked dual powered (grid+hand cranked) defibrillator SanMitra 1000 HCT, which is considered more reliable than traditional defibrillators by experts as it can be used even in the areas where electricity is unavailable. The device is ideal for hospitals located in cities and remote areas and so far, 200 devices has been deployed in India and Africa. The hand-cranked dual powered defibrillator SanMitra 1000 HCT is designed to international IEC standards for medical devices.

Scientists at IIT Kanpur & SGPIMS, Lucknow Developed Novel & Cost-effective 3D Robotic Motion Phantom

Scientists at IIT Kanpur & Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPIMS), Lucknow under the Govt. of India, 'Make In India' initiative developed a novel & cost effective 3D Robotic Motion Phantom, that can reproduce human lung motion and will help deliver focussed radiation in cancer patients. The 3D Robotic Motion Phantom provides the quality assurance of respiratory motion management techniques in radiation therapy and the major part of the phantom is a dynamic platform over which any dosimetric or imaging quality assurance devices can be placed, and the platform can mimic 3D tumor motion by using three independent stepper-motor systems.

Special Update: DRDO Developed an Indigenous High Strength Beta Titanium Alloy on Industrial Scale

Defence Research and Development Organisation (DRDO) premier laboratory Defence Metallurgical Research Laboratory (DMRL), Hyderabad indigenously developed a High Strength Metastable Beta Titanium Alloy containing Vanadium, Iron and Aluminium, Ti-10V-2Fe-3Al on industrial scale for applications in aerospace structural forgings. The excellent forgeability of high strength-to-weight ratio Ti-10V-2Fe-3Al alloy facilitates manufacture of intricately configured components for aerospace applications with potential for significant weight savings and are unique due to their higher strength, ductility, fatigue, and fracture toughness – making them increasingly attractive for aircraft structural applications.