

O Sun God, Savita!
Thou dazzling fount of life-persuasive light!
Sublimest mystery speeding from afar!
Swift became that burst too potent on the sight!
This radiant type of strength and youth!
Glowing eternally!



శ్రీ వేపచేదు విద్యా పీఠము

VEPACHEDU EDUCATIONAL FOUNDATION

The Telangana Science Journal

Health and Nutrition

TIACS-subscribe@yahoo.com (The Indian American Chemical Society)

May the golden-eyed Savita, come hither!
Shining forth he rises from the lap of the dawn!
Praised by singers, my God Savita!
Stepped forth and never missed his place!
He steps forth the splendor of the sky the wide!
Seeing, far-shining, the shining wanderer!
- Rig Veda, vii, 65

He alone shines!
All luminaries get illuminated by His Illumination!
The whole Universe is enlightened by His light!
- Kathapanisad

ॐ भूर्भुवः स्वः तत्सवितुर्वरेण्यं भर्गो देवस्य धीमहि। धियो यो नः प्रचोदयात्॥

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Issue 239

Chief Editor: డాక్టర్ శ్రీనివాసరావు వేపచేదు | डॉक्टर श्रीनिवासरावु वेपचेदु | Dr. Sreenivasarao Vepachedu¹

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3-D-PRINTED PROSTHETIC IMPLANTS

Hearing works partly through the transmission of vibrations from the ear drum to the cochlea, the sensory organ of hearing, via three tiny bones in the middle ear known as ossicles. Ossicular conductive hearing loss occurs when the ossicles are damaged, such as from trauma or infection. Researchers using CT scans and 3-D printing have created accurate, custom-designed prosthetic replacements for damaged parts of the middle ear, according to a study being presented at the annual meeting of the Radiological Society of North America (RSNA). The technique has the potential to improve a surgical procedure that often fails because of incorrectly sized prosthetic implants¹.

SMARTPHONE ADDICTION CREATES IMBALANCE IN BRAIN

According to a recent Pew Research Center study, 46 percent of Americans say they could not live without their smartphones. Researchers have found an imbalance in the brain chemistry of young people addicted to smartphones and the internet, according to a study presented at the annual meeting of the Radiological Society of North America (RSNA)².

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ARTIFICIAL INTELLIGENCE CHIP

An Austin-based molecular data company Nano Global is developing a chip using intellectual property (IP) from Arm, the world's leading semiconductor company. The technology will help redefine how global health challenges from superbugs to infectious diseases, and cancer are conquered.

The pioneering system-on-chip (SoC) will yield highly-secure molecular data that can be used in the recognition and analysis of health threats caused by pathogens and other living organisms. Combined with the company's scientific technology platform, the chip leverages advances in nanotechnology, optics, artificial intelligence (AI), blockchain authentication, and edge computing to access and analyze molecular-level data in real time.

The annual cost to the US health care system of antibiotic-resistant infections is over US \$ 20 billion. In the United States, Clostridium difficile (C.diff) alone is responsible for 250,000 infections and 14,000 deaths, adding US \$ 1 billion dollars per year. Superbugs could cause up to 10 million deaths per year by 2050. Reports have shown that globally up to 700,000 people die of resistant infections every year. In 2015, infectious diseases killed over 5.6 million people. Cancer is the second leading cause of death globally, and was responsible for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer. The number of new cases is expected to rise by about 70% over the next 2 decades³.

ENVIRONMENTAL BENEFITS OF MODERN AGRICULTURE

By making operational improvements and utilizing its unique portfolio of climate-smart modern agriculture tools and practices, Monsanto has already reduced its carbon footprint by more than 200,000 metric tons, a reduction that is roughly equal to burning 200 million pounds less coal. The company expects the rate of these reductions to accelerate over the next several years and is collaborating with farmers, NGOs and global partners to encourage the adoption of climate-smart practices across the agriculture industry⁴.

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Getting to Carbon Neutrality...and Beyond

24% of human-related greenhouse gas (GHG) emissions come from agriculture, forestry and other changes in land usage.

A Global Challenge
 Climate Change can negatively impact:
 • Humanity & Food Security
 • Environmental Stability
 • Agricultural Productivity

Modern Agriculture is Part of the Solution
 Smart tools and other advancements enable farmers to mitigate the effects of climate change on agricultural productivity, while continuing to be a positive force in the fight against it.

MONSANTO'S PORTFOLIO APPROACH FOR REACHING CARBON NEUTRALITY

Since announcing our pledge, we've reduced our carbon footprint by **200K Metric Tons** in terms of GHG emissions, that's like burning **200M Less Pounds of Coal**.

GHG Emissions Reductions will Accelerate

IMPROVEMENT IN OPERATIONS
 We've reached 80% of our goal to reduce GHG emissions intensity from our other operations operations by 2015 by doing:
 • Doing several GHG reduction by **CONVERTING TO CLEANER FUELS**
CONVERTING TO ENERGY-EFFICIENT TECHNOLOGY
IMPROVING TRANSPORTATION
 Working with our contract seed growers to encourage carbon-smart practices.
REVERSE TILLAGE
 helps keep carbon in the soil and reduces GHG emissions from farm activities.
PLANTING COVER CROPS
 increases soil health and helps absorb carbon and store it in the soil.

BREAKTHROUGH PRODUCTS
 Our product portfolio will play an important role in achieving our goal and helping to reduce the carbon footprint of agriculture.
HERBICIDES and other products can help crop growers and reduce GHG emissions in the soil.
SEEDING FERTILIZERS can help farmers use nitrogen more efficiently, reducing both emissions and water runoff.

WATER-SAVING EFFICIENT PRACTICES
 Widespread adoption of precision smart products and practices by farmers can dramatically reduce agriculture's carbon footprint.
 We currently have seed offers in place with **leading retail partners** to drive adoption of climate-smart products.
 You support the participation of our **climate-smart farmers**.

Beyond our own footprint, we're working to create awareness and around the world adoption of climate-smart farming practices.

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Disclaimer⁵

For further information or support, please contact the editor⁶.

¹ 3-D-Printed Prosthetic Implants Could Improve Treatment for Hearing Loss
<https://www.biospace.com/article/releases/3-d-printed-prosthetic-implants-could-improve-treatment-for-hearing-loss/?s=86>

² Smartphone Addiction Creates Imbalance in Brain <https://www.biospace.com/article/releases/smartphone-addiction-creates-imbalance-in-brain/?s=86>

³ Reports compiled by the World Health Organisation (WHO), the US Centers for Disease Control and Prevention (CDC), and the UK government-funded Review on Antimicrobial Resistance (AMR)

⁴ Monsanto on Track to Become Carbon Neutral, Demonstrates Environmental Benefits of Modern Agriculture
<http://www.businesswire.com/news/home/20171117005055/en/>

⁵ **Disclaimer:** Although every effort has been made to provide accurate information from reputable sources, the content of this law update is a general guide and CIP or the author is not responsible for inadvertent errors and/or any inaccuracies of the matter obtained from various resources cited therein. Specialist or registered agent's advice should be sought about your specific circumstances and specific country.

⁶ Dr. Rao Vepachedu at rao.vepachedu@cardinal-ip.com.

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