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NEWS

LEARNING CENTER THEATER HIGHLIGHTS
RSNA 109th SCIENTIFIC ASSEMBLY AND ANNUAL MEETING

Nearly 150 research papers and posters on the topics of generative AI, theranostics, sustainability in imaging, and imaging of immunotherapy will be presented in the Learning Center at RSNA 2023. Ten studies identified as newsworthy are highlighted below.

- Session Number: S1-STCE2-2

Assessment of a Syndecan-1 targeted theranostic nanoparticle for improved detection and treatment of pancreatic cancer
Sunday, Nov. 26, 9:30 AM

We demonstrate that actively targeted nanodelivery of echinomycin results in autophagic cell death in pancreatic and potentially other high-autophagy, apoptosis-resistant tumors. Collectively, these findings support syndecan-1-targeted delivery of echinomycin and dysregulation of autophagy to induce cell death in pancreatic cancer.

- Session Number: T2-STCE2-1

Nanoscale NIRII tracing combined with immunology reveals the dynamic progress of the atherosclerotic plaque immune microenvironment
Sunday, Nov. 26, 9:30 AM

Nanoscale NIR-II tracing combined with immunology can effectively monitor plaque immune microenvironment deterioration, providing a new strategy for real-time diagnosis and the clinical prevention of atherosclerotic unstable plaque rupture.

- Session Number: S5-STCE1-2

Unveiling a Paradigm in Sustainable Radiography: The World's Smallest and Lightest Carbon Nanotube-Based Pocket X-ray System for Soft X-ray Imaging and Irradiation, Featuring Low Energy Consumption and Powered by AAA
Sunday, Nov. 26, 2:30 PM

Researchers developed and characterized a carbon nanotube (CNTs)-based X-ray source that is smaller than the size of the human palm, powered by AAA battery, requiring half the energy to operate compared to filament-based X-ray source, capable of soft X-ray imaging at 7 kV, yielding approximately 1 Gy/hr of radiation dose.

- Session Number: S2-STCE1-2

Energy and greenhouse gas emission savings from power down of CT scanners in non-operational hours in a large regional practice
Sunday, Nov. 26, 10:30 AM

To assess the clinical practicality of placing CT scanners in low power mode, researchers gathered CT scanner use data from practice settings over a multi-hospital region serving 3.1 million people. They found that placing CT scanners in lower power mode in non-operational hours in low-use and medium-use clinical settings results in substantial energy and greenhouse gas savings.

- Session Number: M7-STCE1-3

Radiology and Sustainability: The Experience of the First Carbon-neutral Hospital in Brazil
Monday, Nov. 27, 2:30 PM

This study describes the efforts and initiatives of a tertiary hospital in Brazil to achieve carbon neutrality through a comprehensive renewable energy transition.

- Session Number: T3-STCE1-1

Addressing Healthcare's Carbon Footprint: Imaging Practices and Environmental Impact
Tuesday, Nov. 28, 10:00 AM

This poster analyzes the environmental impact of radiologic studies, compares carbon footprints among different radiologic studies, and examines the influence of imaging guidelines on appropriate imaging use.

- Session Number: T3-STCE1-3

A Global Assessment of Energy Consumption in Radiology and Radiation Oncology: An Environmental Impact Study
Tuesday, Nov. 28, 10:00 AM

The research emphasizes the significant and often disregarded energy consumption of radiology and radiation oncology machines. With the ongoing rise in demand for radiology and radiation oncology services worldwide, it becomes imperative to undertake efforts to curb this environmental impact. This could involve increasing the energy efficiency of machines and looking into alternative energy sources.

- Session Number: T5-STCE2-3

Simplifying Radiology reports into layman language with Large Language Models: a pilot study of effect on patient satisfaction
Tuesday, Nov. 28, 12:15 PM

Simplified radiology reports generated using LLMs can positively impact the patient's understanding of their disease status and improve their overall radiology experience.

- Session Number: W6-STCE1-2

Exploring Racial Disparities in Imaging Datasets via Generative AI: A Path to Enhanced Model Transparency
Wednesday Nov. 29, 1:30 PM

The study demonstrates the effective use of generative AI models for detecting anatomical differences between white and African American patients. African American patients had a significantly higher osteoarthritis severity compared to white patients, suggesting healthcare access disparities at early stages of disease.

- Session Number: W2-STCE1-3

Utilizing Large Language Models for Neuro-Oncologic Prediction: A Multi-Center Study on Magnetic Resonance Imaging Reports
Wednesday, Nov. 29, 9:00 AM

Central nervous system tumors are a leading cause of cancer-related mortality worldwide. We developed large language models (LLMs) using MR imaging reports for the automated curation of neuro-oncologic outcomes across a diverse array of brain tumor types to enhance prognostication accuracy.

Schedule subject to change. Please consult the RSNA 2023 Meeting Program for the latest information.