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DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

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TECHNOLOGY
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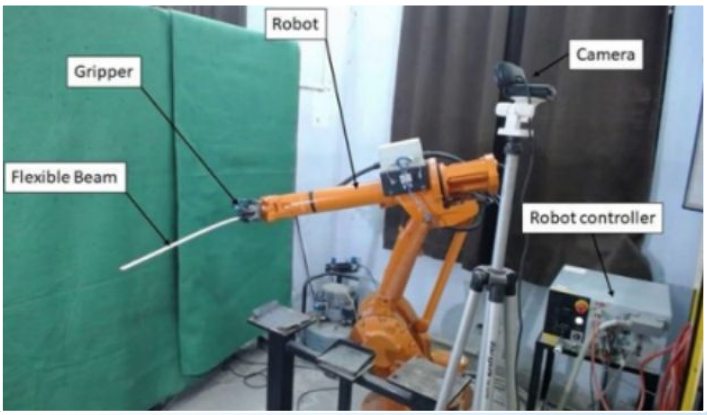
PENDING

(IN202311041395) Vision based vibration suppression of flexible objects by robot wrist motion for assembly



NEED

Flexible objects, like beams, are challenging to manipulate with robotic arms due to residual vibrations, affecting precision and efficiency in assembly tasks. This technology addresses that issue by suppressing vibrations during manipulation.

MARKET ANALYSIS

The global robotics market is growing at a CAGR of 27.5%, projected to reach $290 billion by 2033. The increasing demand for automation, precision in assembly, and advancements in AI are driving this growth.

TECHNOLOGY OVERVIEW

This patent presents a system for suppressing vibrations in flexible objects held by a robotic arm. Using a robot-vision-based, real-time system, it identifies and controls vibrational amplitude, improving precision during beam assembly tasks, especially with varying object properties.

Target Industries

Robotics, Automation, Manufacturing. , Industrial robotics manufacturers, automation system integrators, robotics solution providers, and companies focusing on precision assembly in industries like aerospace and automotive.

TECHNOLOGY KEY FEATURES

Robotic system suppresses vibrations in flexible objects using vision sensors, predictive models, and real-time control. It adapts to material properties and geometrical variations, ensuring efficient and precise assembly operations.

AT A GLANCE

- SDG 9 (Industry, Innovation, and Infrastructure), SDG 12 (Responsible Consumption and Production)

Read more here

Technology is available for licensing/ co-development.

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