NASA-JSC Technology Opportunity

MSC-22544-1 Capacitance Probe for Fluid Flow and Volume Measurements

This technology replaces mechanical fluid flowmeters with an electronic probe that is small and portable. The probe's main use is to measure the volumetric rate of flow of a liquid. The probe feeds data directly to a portable computer or workstation, so analog measurements are immediately converted to digital records. Under appropriate conditions, this probe can also identify liquids.

Potential Commercial Uses

Hospitals

Hospitals could use this technology in research labs, pharmaceutical production, and anesthesiology.

Waste Treatment Facilities

These facilities require close monitoring of flow rates and pipe contents from various parts of the plant.

Food Processing Plants

These plants need to monitor exact quantities of mixed liquids.

Pharmaceutical Manufacturers

Pharmaceutical manufacturing plants need exact flow measurements when mixing chemicals.

Chemical Plants

Chemical plants need exact flow measurements when mixing chemicals.

Benefits

Replaces Mechanical Flowmeters

This device can replace mechanical flowmeters used currently with a simple, dependable electronic device with no moving parts. It is more accurate and not as invasive.

Digital Recording

Readings are instantly converted from analog signals to digital records. These records could be broadcast on any bandwidth needed from remote locations to a central computer. This brings information technology into fluid flow measurement, allowing computers to set parameters, adjust rates of flow, and keep readings digitally.

Portability

The probe is very easy to transport, and could be carried from site to site quickly and easily.

Development Status

A working prototype exists.

Options for Commercialization

This technology opportunity is part of the NASA Technology Transfer Program, the goal of which is to stimulate development of commercial applications of NASA developed technology. NASA is seeking industrial partners to continue the testing effort and license the technology for commercialization.
The invention, "Capacitance Probe for Fluid Flow and Volume Measurement", is protected under U. S. patent number 5,596,150 issued on January 21, 1997. The patent is owned by the United States of America and was developed by the National Aeronautics and Space Administration.

Contact for Technical Information

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