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For immediate release

New Book on Mass Flow Measurement Explores Coriolis Theory and the Geometry of Flow

Wakefield, MA (July 17, 2026) — Flow Research is pleased to announce that a new book written by its founder and president, Dr. Jesse Yoder, is now available. *Mass Flow Measurement*, published by Taylor and Francis on June 26, 2026, explores the concept of mass and its measuring technologies in non-technical language. It also takes a fresh look at some traditional concepts, including the use of pi in Euclidean geometry for measuring circular pipes, an essential part of flow measurement. According to Dr. Yoder:

“Euclidean concepts have been handed down from generation to generation like worn-out jeans and T-shirts. While Euclidean geometry has served engineering extraordinarily well for more than 2000 years, some of its assumptions about ideal objects no longer reflect the realities of modern measurement. The world of flow is moving towards hybrid flowmeters that incorporate multiple measuring technologies in a single pipe. This trend is opening up a new world of accuracy, diagnostics, and previously unimagined capabilities in flow measurement. Examining some commonly accepted assumptions could lead to an unexpected but beneficial paradigm shift in the flowmeter world that supports these changes.”

Mass Flow Measurement focuses on four mass flow measuring technologies: Coriolis, thermal, mass flow controller, and multivariable. It provides the history and operating principle for each technology, and discusses available products and the leading suppliers.

The book is available on [Amazon](#). In addition, a [Flow Meter Guy Podcast](#) with Brent Baird about the book is now available on YouTube.

Theory of Mass from Objects to Subatomic Particles

Mass Flow Measurement identifies six levels of mass, beginning with solid objects and going all the way down through molecules, atoms, nuclei, protons and neutrons, and subatomic particles. It finds the locus of mass in the near light-speed motion of subatomic particles such as quarks and gluons. It then reconstructs this ladder of mass through a series of emergent properties that begins with subatomic particles and ends with solid objects. The book also shows how our concept of atomic mass has evolved from the Greek philosopher Democritus to John Dalton, Niels Bohr, and Erwin Schrodinger.

Does the Coriolis meter really use the Coriolis principle?

Coriolis flowmeters, the only mass technology that measures mass flow directly, are a major focus of the book. However, *Mass Flow Measurement* shows that the name ‘Coriolis’ is more an accident of history than a description of the operating principle. The book proposes an alternative framework in which Coriolis flowmeters operate according to inertial mass rather than by what is called the Coriolis principle. In this framework, Coriolis meters do not rotate the flowtube or the fluid, but instead oscillate it. Focusing on the effect of inertial mass does not require a change in the mathematics; it is instead a different interpretation of the same data.

To more fully understand the Coriolis principle, Flow Research translated the 1835 manuscript written by Gaspard Gustave de Coriolis on the motion of bodies in a rotating frame of reference from French to English for the first time. This article formed the basis of the “Coriolis effect” in meteorology, a term first introduced in 1901, and also inspired a series of patents in flow measurement, from an initial patent in 1958 that rotated the flow, to Anatole Sipin’s 1965 patent

that calls for oscillating the flow, and finally, to Jim Smith's 1978 patent that builds on Sipin's patent and also calls for oscillating rather than rotating the flow.

New Perspective on the Geometry of Flow

Geometry is fundamental to flow measurement, since most pipes are round. Traditionally, calculating the area of a round pipe requires this formula: $\text{area} = \pi \times (\text{radius squared})$. Here π represents the ratio of the circumference of a circle to its diameter. The concept of π is deeply rooted in Greek attempts to find the area of a circle by inscribing and circumscribing a countless number of polygons in a circle until the limit is reached and the area of the circle is approximated. The length of the circumference of a circle is determined by the formula $(2 \times \pi \times \text{radius})$.

The book proposes an alternative framework involving Finite Point Geometry. In The Rope Experiment, it shows that the length of the circumference of a circle can be measured – rather than calculated from an abstract formula – by taking a rope in the shape of a circle and flattening it into a straight line. When the rope is measured as a straight line, there is no need to involve π to express its length. Instead, its length can be given as a rational value of a specified unit of measurement. Once we have a rational value for the circumference of a circle, the ratio (circumference/diameter) can be substituted for π in equations that describe the mathematical properties of circles and circular areas.

“Finite Point Geometry requires rethinking the Euclidean concept of a point with no area; I am proposing instead that points have area. It also points to rethinking the foundations of calculus,” explains Dr. Yoder. “Rather than discarding classical mathematics, Finite Point Geometry is the mathematical equivalent of pouring new wine into old bottles. And I like to think that the world of flow is ready for some new wine.”

About Flow Research

Flow Research, www.flowresearch.com, located in Wakefield, Massachusetts, is the only independent market research company whose primary mission is to research flowmeter products and markets worldwide. Flow Research specializes in flow measurement devices, and conducts

market research studies in a wide variety of instrumentation areas. We maintain a flowmeter knowledge base at www.worldflow.com.

About Dr. Jesse Yoder

Dr. Jesse Yoder founded Flow Research in 1998. Since then, he has written 300+ market studies, 300+ articles, and four books, including *New-Technology Flowmeters* and *Conventional Flowmeters* (CRC Press, 2023). He holds philosophy degrees from the University of Maryland (B.A.) and University of Massachusetts Amherst (PhD).