

# Fractional Calculus and its Recent Application in Various Sciences

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**Abstract**—*In this paper, we wish recalling basics of fractional calculus. Historically, the fractional calculus is a term used for the theory of derivatives and integrals of arbitrary orders over rational numbers, which generalizes the notion of integer order differentiations and n-fold integrations. Further, it is worth mentioning that recent advances of fractional calculus are dominated by modern examples of applications in differential and integral equations, physics, signal processing, fluid mechanics, viscoelasticity, mathematical biology and electrochemistry.*

**Keywords:** *Fractional Calculus, Fractional Solutions, Fractional derivatives.*