Osbourne Reynolds Biography

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Biography

Reynolds has been described as the most successful and probably most influential English theoretical mechanical engineer of the nineteenth century. He pioneered studies in viscosity and turbulence in fluids, as well as developed improvements for many fluid-based machines.

Born in Belfast, Ireland, Reynolds attended college at Cambridge. He graduated in 1867 Seventh Wrangler, an accolade impressive enough to earn him a fellowship at Queen's College. Just a year later he was appointed to the Chair of Engineering at Owen's College. There he began a challenging new curriculum which cultivated a number of remarkable students, among them physicist Joseph J. Thomson. He remained at Owen's College for the rest of his academic career.

At the heart of Reynold's professional interests was an intense curiosity about fluid mechanics, an inquisitiveness that eventually helped him to become the principal fluid engineer of his time. By 1875 he had published a series of papers discussing ship propellers and had also conducted extensive research on the production of vortices by bodies moving through water. Much of this later work was based on his development of the Reynolds number, a mathematical constant vital to the study of viscous fluids. In fact, the Reynolds number is still used today in viscosity experiments.

Reynold's advances were not limited to theoretical research. In 1887 he published a detailed paper on tides based upon his work with model ships and study tanks; before this time, few scientists had successfully used models and tanks. He also is known for several theories of lubrication, paving the way for future research in that field. Reynolds held several patents for improved water pumps, turbines, and hydraulics, and his prototype steam engine served as a basis for later models. For his work, Reynolds was elected a Fellow of the British Royal Society in 1877 and was given the Royal Medal in 1888.