

Bio-Polymers for Improving Liquid Flow in Pipelines—A Review and Future Work Opportunities

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ABSTRACT

Several decades following Tom's discoveries on polymeric drag reducing agents (DRA) continue to see research efforts to produce robust and shear-stable DRA. Most efforts revolve around established artificial polymers, but questions have been raised recently about their environmental impact and safety. As such, a large number of researchers are looking into natural materials especially bio-polymers as substitutes. Several bio-polymers are found to exhibit drag reducing capabilities in aqueous media. All these factors suggest that bio-polymers would make a suitable alternative to artificial DRAs. This paper aims to present several works to-date on bio-polymer DRAs, and expose new possibilities.

KEYWORDS: Drag reduction; Pipelines; Turbulence; Polymers

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