# Pengurangan koefisien gesek dengan menggunak PEG 4000, 200 PPM, 400 PPM, 600 PPM pada P bulat diameter 3 mm = the reduction flow of pressure drop with PEG 4000, 200 PPM, 400 PPM, 600 PPM for pipe diameter 3 mm

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Abstrak

Aliran turbulen dari larutan polimer PEG 4000 untuk permukaan pipa stainless steel telah diteliti. Eksperimen ini menggunakan pipa stainless steel berdiameter luar 5 mm dan diameter dalam pipa 3 mm. Nilai dari kekasaran tersebut telah diukur tersebut dengan nilai kekasaran (k) 1.12 m. Pipa tersebut diuji dengan konsentrasi polimer polyethylene glycol (PEG) 4000 200, 400 dan 600 ppm. Hasil menunjukkan bahwa karakteristik aliran dipengaruhi oleh penambahan konsentrasi polimer. Pada aliran turbulen tanpa additive kenaikan koefisien gesek terjadi akibat dari kondisi kekasaran dinding. Penambahan additive ke dalam air terlihat efektif pada permukaan pipa stainless steel. Penambahan 200 ppm additive polimer PEG 4000 pada bilangan Reynolds 8078 dapat menurunkan gesekan pada pipa stainless steel sebesar 65,27 persen, sedangkan dengan penambahan 200 ppm additive PEG 4000 penurunan gesekannya 20 persen.
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Turbulent flow of dilute polymer polyethylene glycol (PEG)4000 solutions in stainless steel pipes was studied. This experiment use stainless steel pipe with outside diameter (OD) 5mm and inside diameter (ID) 3mm. Inside pipe roughness is measured with relative roughness (k) 1.12 m and 250, 500 and 1000 ppm for additive concentration. The results show that flow properties are influenced by polymer addition and surface roughness. In the turbulent flow regime without additive, the increasing of friction coefficient appeared to be effected by wall condition alone. Addition of polymer to water is effective for rough in stainless steel pipe. For example with addition of 600 ppm of polymer polymer polyethylene glycol (PEG)4000 reduced drag in stainless steel pipe by 65,27 percent at Reynolds number 8078, whereas in 200 ppm addition tested drag was reduced only 20 percent.