البحث السابع

بيانات البحث رقم (7)

نوع البحث : **بحث مشترك**

(مشترك مع أخرين فى نفس التخصص)

1- بيانات البحث رقم (7):

عنوان البحث باللغة الانجليزية	**Dilution of a Single-Port Submerged Diffuser with Fixed Vanes**
عنوان البحث باللغة العربية	**تخفيف الناشر المغمور بمنفذ واحد مع ريش ثابتة**

3.-ملخص البحث باللغة الانجليزية:

Dilution of a Single-Port Submerged Diffuser with Fixed Vanes

Thermal pollution refers to the alteration of water properties caused by the use of water as a cooling fluid. This occurs when water is pulled from a water source, condensed to release heat, and then recirculated back into the water source as thermal discharge. The characteristics of thermal discharge dilution are influenced by factors such as jet momentum, buoyancy, turbulence-induced distribution, density stratification of the surrounding environment, configuration of water currents, presence of solid boundaries, and heat exchange at the surface. A single-port diffuser is used for the discharge of hot

water. This study employed experimental methods to investigate the impact of fixed vanes on the thermal effluent dilution of a single-port submerged diffuser. The use of fixed vanes increases the dilution of a single-port submerged diffuser. Using fixed vans for H= 1, ΔTm was reduced by 3.13%, 10.26%, and 2.74%, and ΔTe was reduced by 15.66%, 17.86%, and 22.86%, respectively, for each flow ratio. For H= 2, ΔTm decreased by 2.38%, 3.41%, and 4.48%, and ΔTe decreased by 8.33%, 15%, and 16.67%, respectively, for each flow ratio. For H= 3, ΔTm decreased by 2.86%, 2.22%, and 3.45%, and ΔTe decreased by 5%, 29.41%, and 22.73%, respectively, for each flow ratio. In addition, increasing the Reynolds number ratio reduces the mixing zone and increases the dilution temperature.

4-بيانات نشر البحث رقم (7):

مكان النشر	University of Tehran
اسم المجلة العلمية	pollution
الموقع الالكترونى	https://doi.org/10.22059/poll.2024.374295.2305 https://jpoll.ut.ac.ir/article_98783.html
وسنة النشر	2025