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| **Published Researches****الأبحاث المنشورة** |
| Title**عنوان البحث** | * Using polypropylene needle punch nonwoven sorbents as the interceptor for oil in static and dynamic water experiments
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| Author**الناشر** | * Abeer Alassod, Huseein Tina, Syed Rashedul Islam, Wanzhen Huang, Guangbiao Xu
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| Abstract**خلاصة** | * This work was to determine the impact of pore size and thickness of sorbents besides the influence of oil properties on the performance of sorbents used as an interceptor barrier for oils in Static and dynamic water experiments. polypropylene needle punch sorbents were used. SEM test showed the porous structure of sorbents. Oil sorption test investigated that with sorbents had same thickness N1 absorbed oil 8.89 g/g of soybean oil and 7.15 g/g of motor oil. Meanwhile, sorbents with the same pore size, N6 absorbed oil 6.11 g/g of soybean oil and 5.13 g/g of motor oil. All sorbents showed a retention rate of over 75% after 24 h of dripping. Dynamic oil spreading revealed that smaller pore size and higher thickness exhibited higher height wicking. The static performance experiment showed motor oil and soybean oil started to leak at 38 and 32 min for N1, then prolonged with reducing pore size with intercepting efficiency around 70% after 600 min for motor oil and 540 min for soybean oil. In comparison, The motor oil and soybean oil started to leak at 49 and 40 min for N4 and then prolonged with increased thickness with intercepting efficiency around 70% after 480 min for motor oil and 360 min for soybean oil. Under the dynamic experiment, oils spilled quicker with initial leakage of sorbents N3 and N6 at rate flow 55.65 ml/s for motor oil and soybean oil were (41 min, 36 min) and (50 min, 41 min) while intercepting efficiency was (99%, 98.40%) and (99.33%, 98.40%).
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