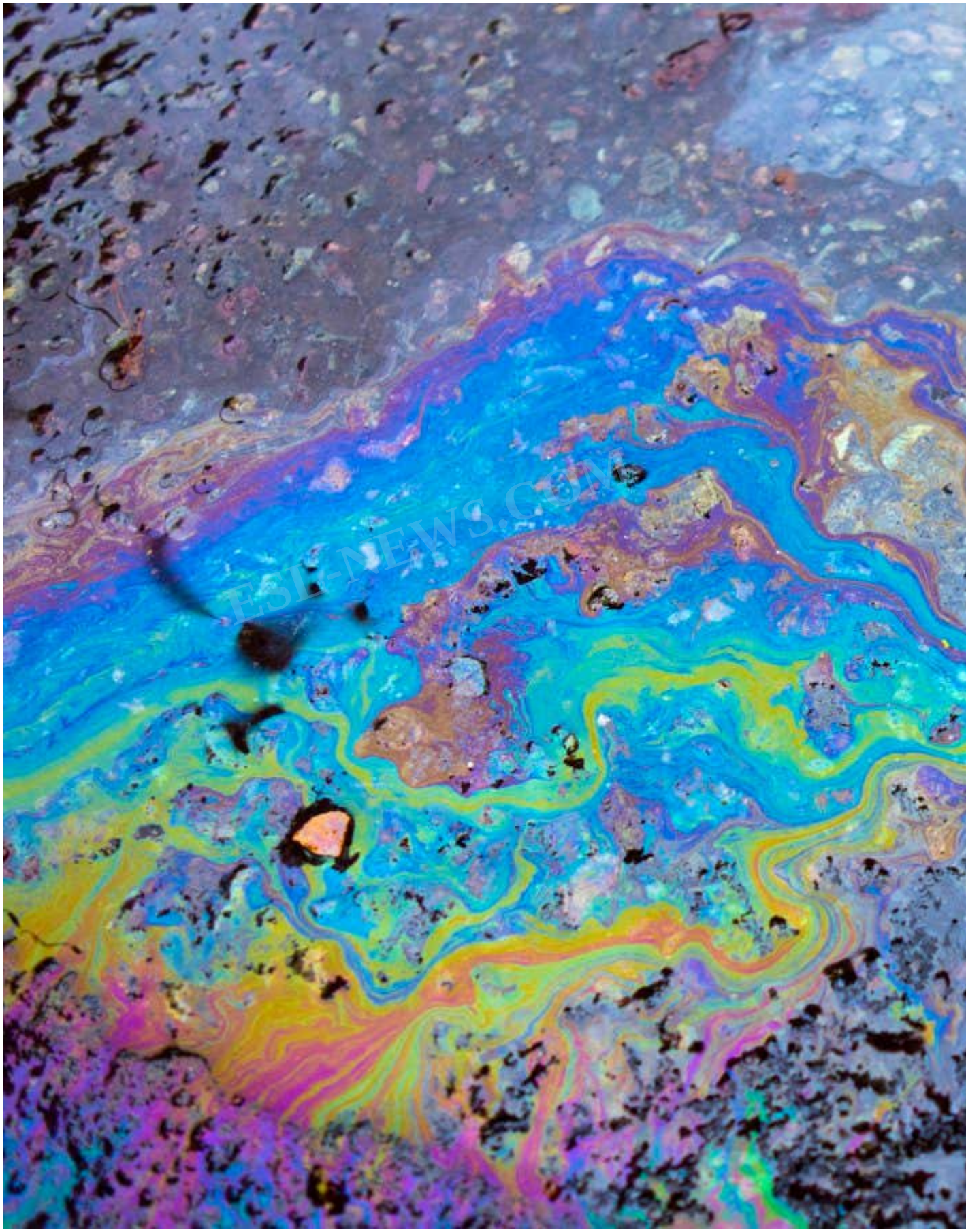
Revolutionary method purifies oil and water with 99.9% accuracy

Description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Oil and water are difficult to separate without leaving some impurities - Abaca Press/Alamy

Mixing oil and water is a problem, but scientists have found a better way to separate them. By using special membranes in thin channels, they can recover pure oil and water. This is important for cleaning up industrial waste more efficiently.

There are different methods to separate oil and water, like using chemicals or membranes. The new method uses two layers of membranes – one for oil and one for water – to get rid of impurities.

In experiments, the scientists found that narrowing the channel width led to better oil and water recovery. By improving this process, they can clean the mixture more effectively.

The team believes that this new method can be scaled up for use in industries. It is a simple and efficient way to separate oil and water, making it easier to deal with waste.

Vocabulary List:

1. **Membranes** /ˈmɛm.brɪn/ (noun): Thin layers that separate substances or act as barriers.
2. **Impurities** /ɪmˈpjʊr.ɪ.tiz/ (noun): Substances that contaminate or interfere with purity.
3. **Efficiently** /ɪˈfɪʃ.ənt.li/ (adverb): In a manner that achieves maximum productivity with minimum wasted effort or expense.
4. **Recovery** /rɪˈkʌv.ər.i/ (noun): The process of returning to a normal state after a setback.
5. **Industrial** /ɪnˈdʌs.tri.əl/ (adjective): Relating to or characterized by industry.
6. **Scalable** /ˈskeɪ.lə.bəl/ (adjective): Capable of being changed in size or scale; adaptable.

Comprehension Questions

Multiple Choice

1. What is the main focus of the described scientific research?

   Option: Separating oil and water
   Option: Creating new chemicals
   Option: Developing industrial waste
   Option: Exploring membrane structures

2. Which method is NOT mentioned in the text for separating oil and water?

   Option: Chemicals
   Option: Membranes

Option: Heat separation
Option: Narrow channels with membranes

3. Why is it important to find efficient ways to separate oil and water?

Option: To reduce industrial waste
Option: To increase impurities in waste
Option: To complicate waste management
Option: To promote oil production

4. What did narrowing the channel width lead to in the experiments?

Option: Better recovery of oil and water
Option: Increase in impurities
Option: Decrease in membrane efficiency
Option: No noticeable change

5. What do scientists believe about scaling up this new method?

Option: It can be used in industries
Option: It is not practical for large-scale use
Option: It has limited applications
Option: It is too complex to implement

6. What is described as a benefit of the new separation method?

Option: Simplifying waste management
Option: Increasing impurities in waste
Option: Complicating industrial processes
Option: Slowing down oil recovery

True-False

7. Mixing oil and water is not a common problem in industrial processes.

8. The new method for separating oil and water uses multiple layers of membranes.

9. Narrowing the channel width negatively affects oil and water recovery.

10. The team believes the new method cannot be implemented on a larger scale.

11. The main purpose of the new method is to make waste management more difficult.

12. Improving the separation process can lead to more effective cleaning of the oil and water mixture.

Gap-Fill

13. Scientists found that narrowing the channel width led to better oil and water recovery. By improving this process, they can clean the mixture more _____.

14. The team believes that this new method can be scaled up for use in _____.

15. Mixing oil and water is a problem, but scientists have found a better way to separate them by using special membranes in thin _____.

16. The new method uses two layers of membranes – one for oil and one for water – to get rid of _____.

17. There are different methods to separate oil and water, like using chemicals or _____.

18. The process of separating oil and water is important for cleaning up _____ waste more efficiently.

Answer

Multiple Choice: 1. Separating oil and water 2. Heat separation 3. To reduce industrial waste 4. Better recovery of oil and water 5. It can be used in industries 6. Simplifying waste management
True-False: 7. False 8. True 9. False 10. False 11. False 12. True
Gap-Fill: 13. effectively 14. industries 15. channels 16. impurities 17. membranes 18. industrial

Answer

CATEGORY

1. Sci/Tech - LEVEL2

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