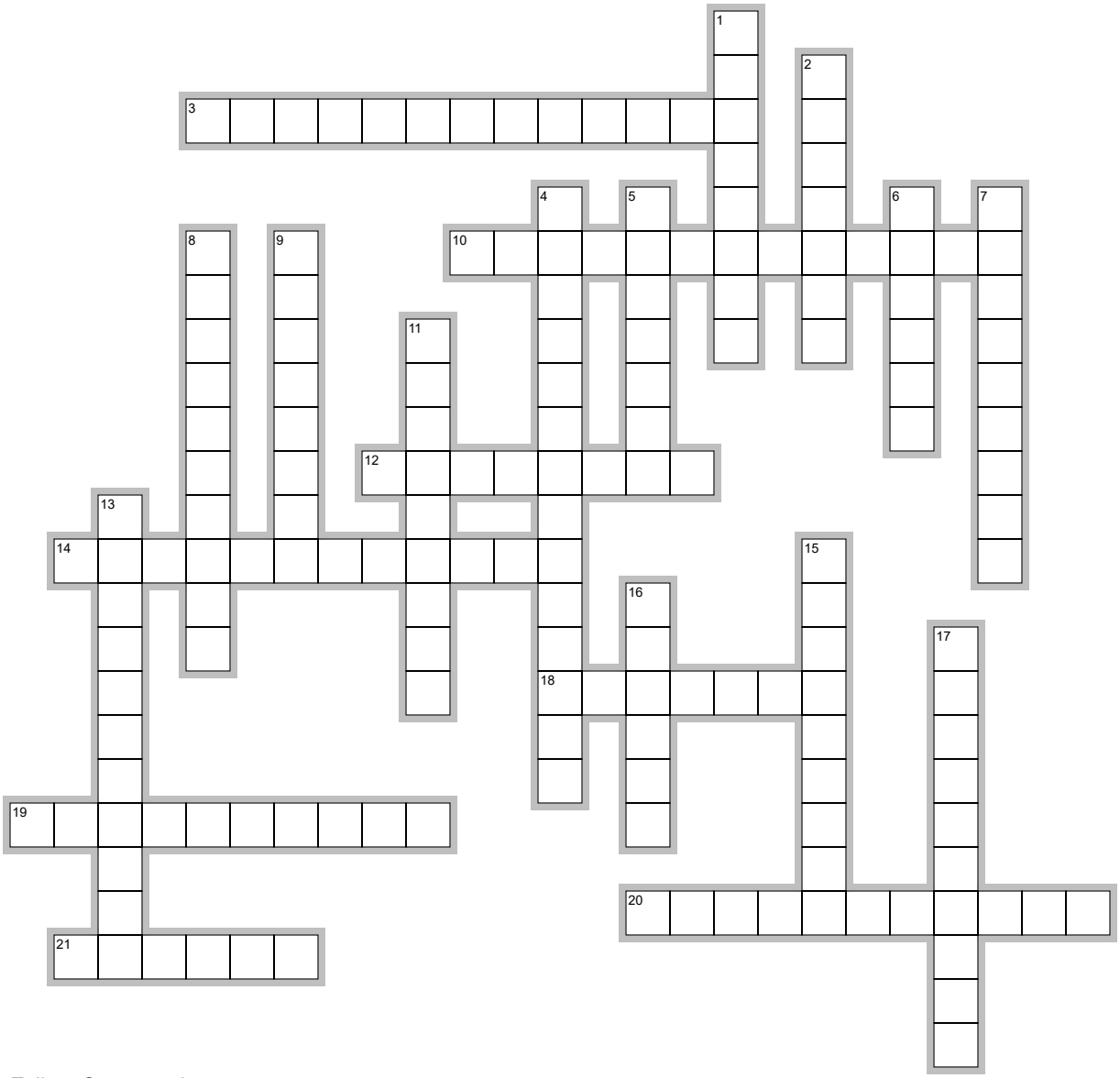
Petroleum engineering-themed crossword puzzle #10

Sobhan Kohanpour



EclipseCrossword.com

Across

3. Process where a dissolved solid comes out of solution due to changed conditions
10. Process of stabilizing asphaltenes in crude oil by resins and aromatics to prevent flocculation
12. Blocking of pore spaces by deposited solids, leading to reduced flow
14. Characteristic of asphaltene deposition that, once it occurs (e.g., solid phase formation), cannot easily be reversed
18. Aromatic solvent in which asphaltenes are readily soluble
19. Alternative model that treats asphaltene behavior as a solution-phase equilibrium
20. Non-hydrocarbon elements in crude (e.g., N, S, O) often present in asphaltenes
21. Type of medium (like a rock) containing tiny pore spaces that can be plugged

Down

1. Trace metal commonly found in asphaltene molecules (often alongside nickel)
2. Straight-chain alkane commonly used to precipitate asphaltenes in lab tests
4. Small cluster of asphaltene molecules (on the order of 6–8) that forms in solution
5. Thick, viscous form of petroleum often found in tar sands

Petroleum engineering-themed crossword puzzle #10

Sobhan Kohanpour

Down

6. Another trace metal frequently detected in asphaltenes
7. By definition, asphaltenes are the fraction of crude oil that is n-heptane-_____
8. Heaviest fraction of crude oil that can precipitate and cause deposition
9. Bottom section of a well where fluid flows into the production tubing
11. Model of asphaltene stability that views them as colloidal solid particles in oil
13. Proposed asphaltene molecular structure type consisting of multiple aromatic cores linked by alkyl bridges
15. Underground formation that holds and produces petroleum
16. Proposed structural type of asphaltene molecule consisting of one fused aromatic ring system
17. Undesirable accumulation of solid material on surfaces (e.g., in wells or pipes)