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(54) **SYSTEMS AND METHODS FOR TREATING FLUIDS**

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SYSTÈMES ET PROCÉDÉS POUR LE TRAITEMENT DES FLUIDES

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(56) References cited:
WO-A1-93/19009 DE-A1-102010 021 792
US-A- 3 601 079 US-A- 4 340 076
US-A- 4 722 363 US-A- 4 958 653
US-A- 5 165 440 US-A- 5 346 617
US-A1- 2002 086 969 US-A1- 2008 047 614
US-A1- 2012 004 343 US-A1- 2012 004 343
US-A1- 2012 127 820 US-A1- 2012 231 982

• **SHAH S N ET AL: "Drag reduction characteristics
in straight and coiled tubing - An experimental
study", JOURNAL OF PETROLEUM SCIENCE
AND ENGINEERING, ELSEVIER, AMSTERDAM,
NL, vol. 53, no. 3-4, 1 September 2006
(2006-09-01), pages 179-188, XP027974902, ISSN:
0920-4105 [retrieved on 2006-09-01]**

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