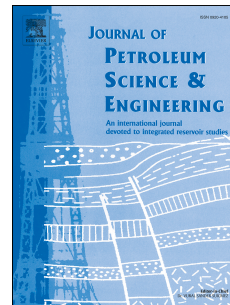


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Ultrasonic automated oil well complex and technology for enhancing marginal well productivity and heavy oil recovery

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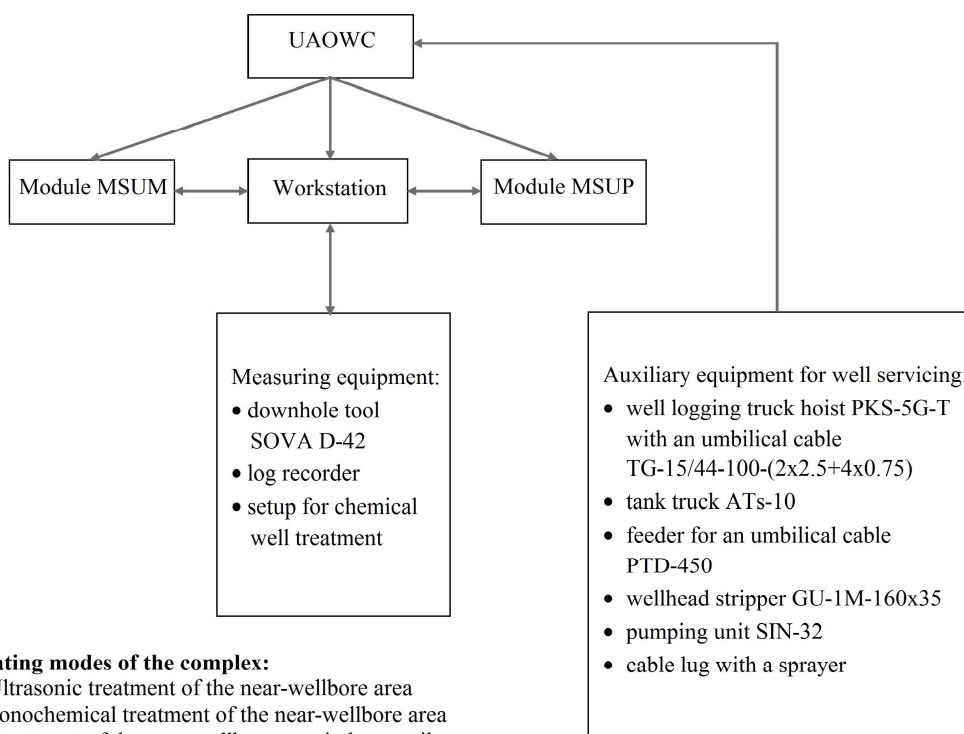
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Block Diagram of Ultrasonic Automated Oil Well Complex (UAOWC)



The operating modes of the complex:

Mode 1. Ultrasonic treatment of the near-wellbore area

Mode 2. Sonochemical treatment of the near-wellbore area

Mode 3. Treatment of the near-wellbore area in heavy oil recovery

Mode 4. Emergency operation: automatic safe shutdown condition

Module MSUM

The magnetostrictive ultrasonic oil well module MSUM consists of an upgraded ultrasonic generator TS10W and downhole tools with magnetostrictive transducers with diameters of 42 mm (PSMS-42) and 102 mm (PSMS-102).

Module MSUP

The piezoceramic ultrasonic oil well module MSUP consists of an upgraded ultrasonic generator TS6P and downhole tools with piezoceramic transducers with diameters of 44 mm (PSPK-44) and 52 mm (PSPK-52).

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