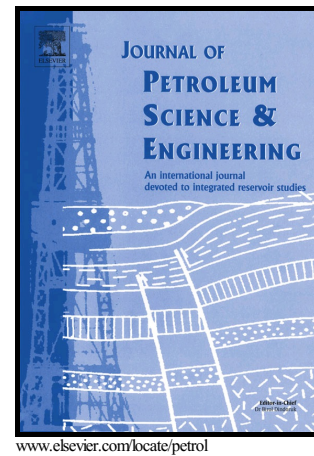


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1 **Application of fluid inclusions to the charging process of the**
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9 **Abstract**

10 This study examines the organic geochemistry, physics and accumulation
11 dynamics of the Chang 7 tight oil reservoirs in the Yanchang Formation in the Ordos
12 Basin. We analyse the episodes, timing, and forces of hydrocarbon charging and
13 ascertain the charging process of the lacustrine tight oil in the Chang 7 oil reservoirs
14 by using petrography, micro-beam fluorescence spectra, micro-thermometry, and
15 trapping pressure simulations of fluid inclusions from these reservoir beds. Three
16 conclusions are reached. First, five episodes of brine inclusions and three episodes of
17 hydrocarbon inclusions occurred in the Chang 7 tight reservoir beds. The hydrocarbon
18 inclusions are mainly distributed in fractures that cut across and within quartz grains
19 and have blue-green, green, and yellow-green fluorescence colours. Second, the peak
20 wavelengths, Q_{F535} , and $Q_{650/500}$ of the micro-beam fluorescence spectra indicate three
21 charging episodes of tight oil. According to the burial and geothermal histories, the
22 charging timing were 142-110 Ma, 128-122 Ma and 114-106 Ma, which correspond to
23 the Early Cretaceous. The timing approximately match the main generation and

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