Electronic Supplementary Material (ESI) for RSC Advances.

Optimization and characterization of biosurfactant produced by indigenous *Brevibacillus borstelensis* isolated from a low permeability reservoir for application in MEOR

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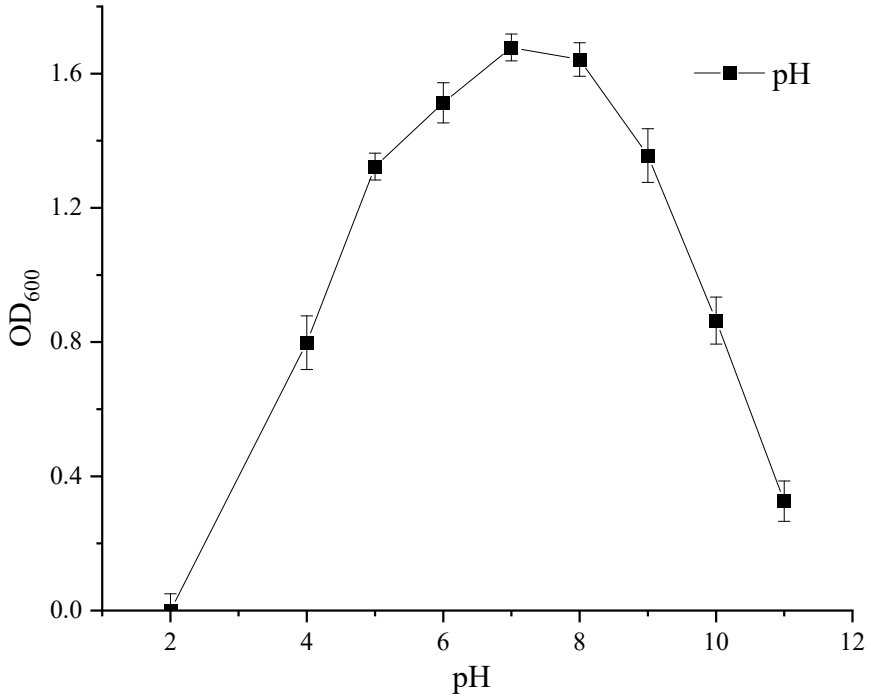
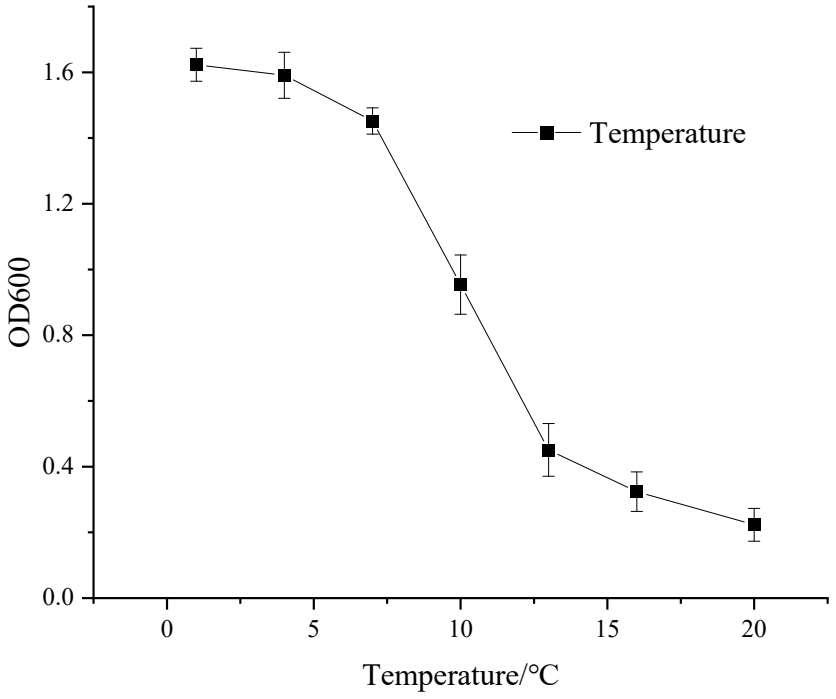
The following are the Supplementary data to this article:





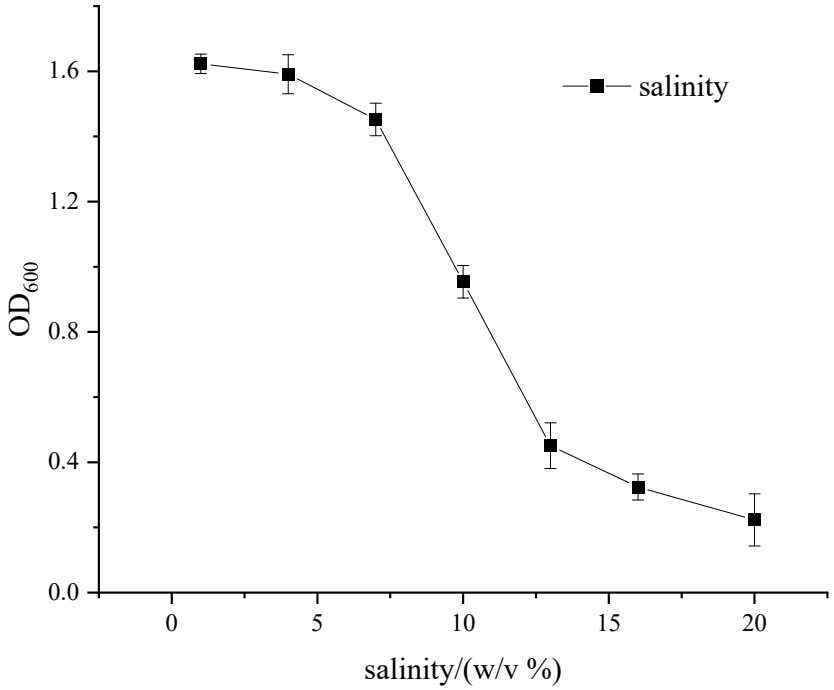


Figure S1 The effect of pH, temperature, salinity on the growth of strain YZ-2

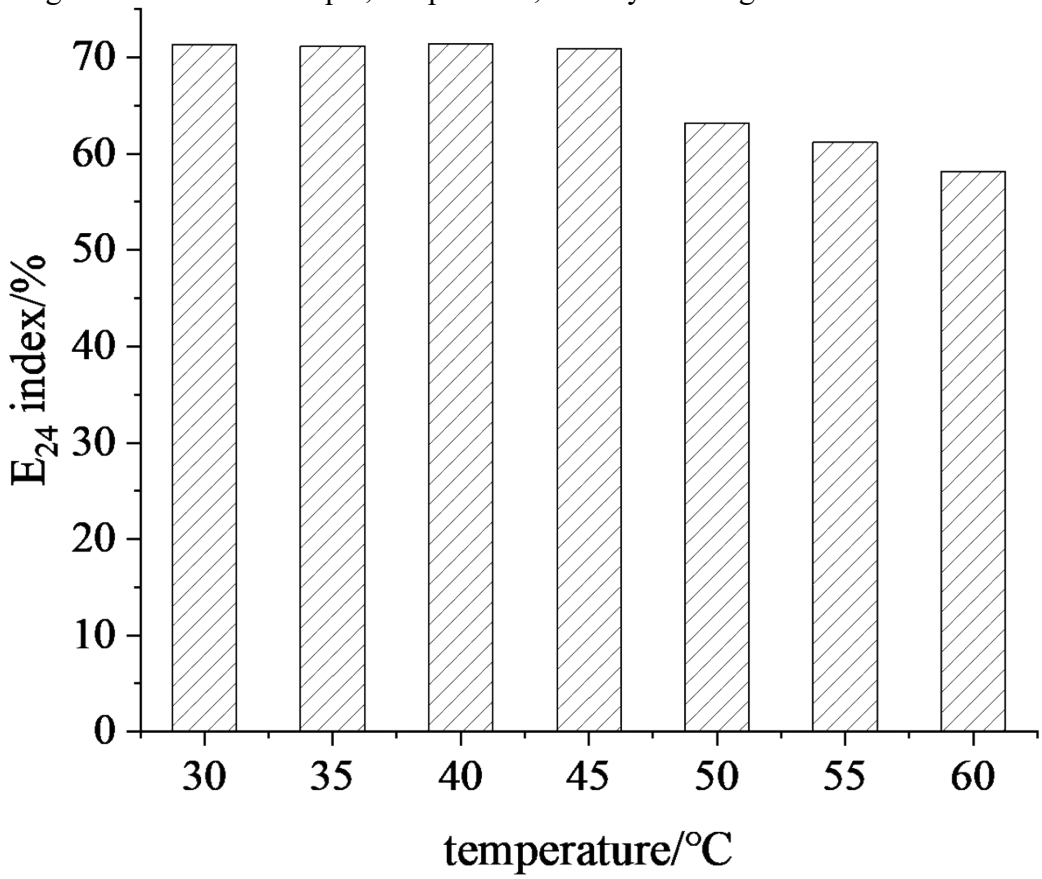


Figure S2 Effect of temperature on emulsifying activity of biosurfactant produced by YZ-2 (kerosene)

Figure S3 Micrograph of rock core and micro-glass model

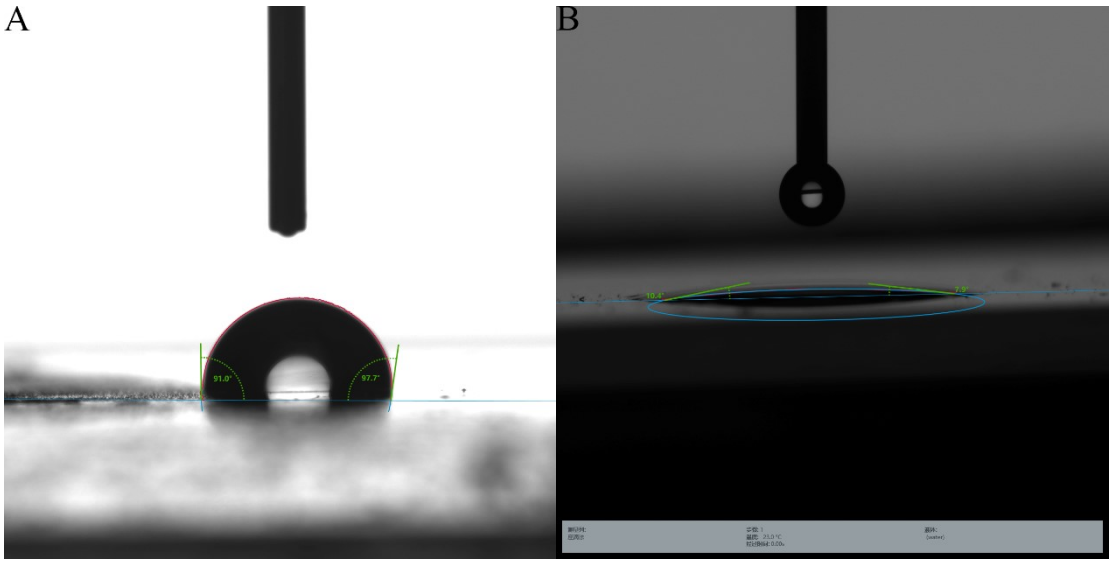


Figure S4 A: the contact angle of water on the oil aged glass surface; B the contact angle of biosurfactant solution on the glass surface which was treated by biosurfactant solution after oil aged.

Table S1 The parameters of the cores

	Size (mm)	Diameter(mm)	Length(mm)	permeability/$10^{-3}\mu m^2$	porosity/%
core A	25.0×72.4	25	72.4	47.54	9.89
core B	25.0×70.4	25	70.4	42.32	8.46
core C	25.0×69.3	25	69.3	45.33	9.04
core D	25.0×72.6	25	72.6	46.22	9.33

Table S2 Crude oil properties

Degassed oil viscosity at 30°C	Degassed oil density at 30°C	SARA content (weight percent)			
		Saturate	Aromatic	Resin	Asphaltene
7.69 mPa.s	0.8559	63.2	24.7	10.2	1.9

Table S3 Ion composition of formation water

Ion	Na^+	Mg^{2+}	Ca^{2+}	K^+	CO_3^{2-}	Cl^-	NO_3^-	HCO_3^-
Concentration(mg/L)	1271.56	16.71	29.58	4.15	201.24	523.56	3.7	947.71