Supplementary materials

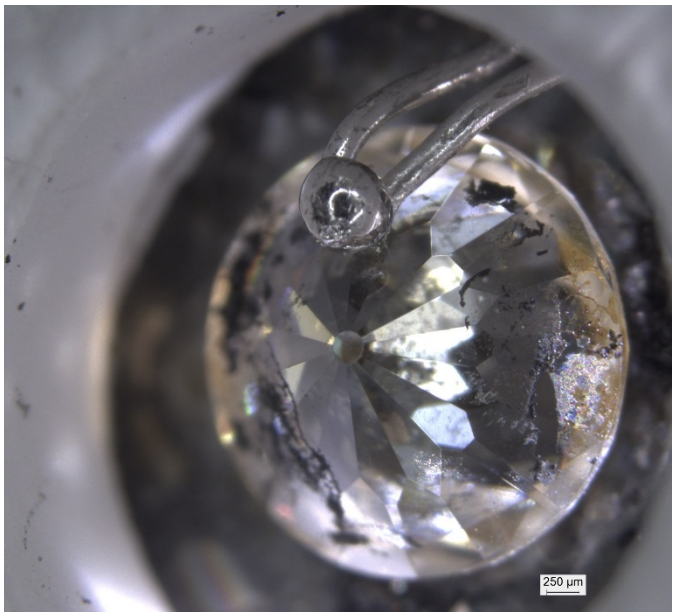

Figure S1. Pt-Pt/Rh thermocouple, touching the surface of the diamond.

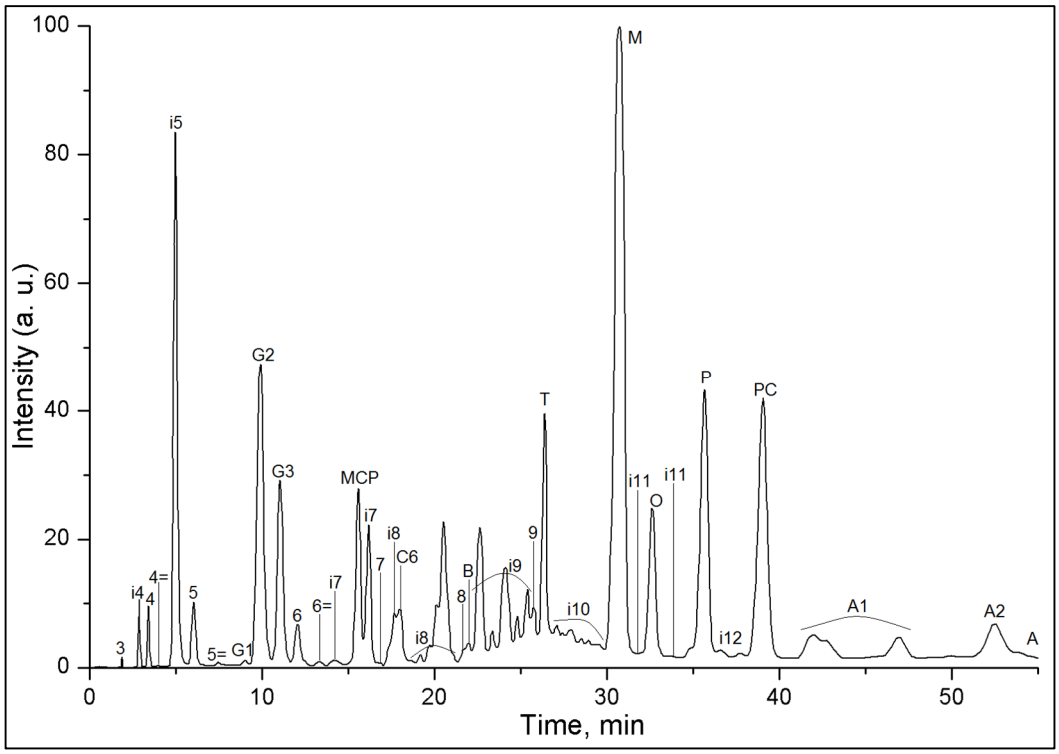

Figure S2. Chromatogram of the synthetic hydrocarbon system (a.u.—arbitrary units).

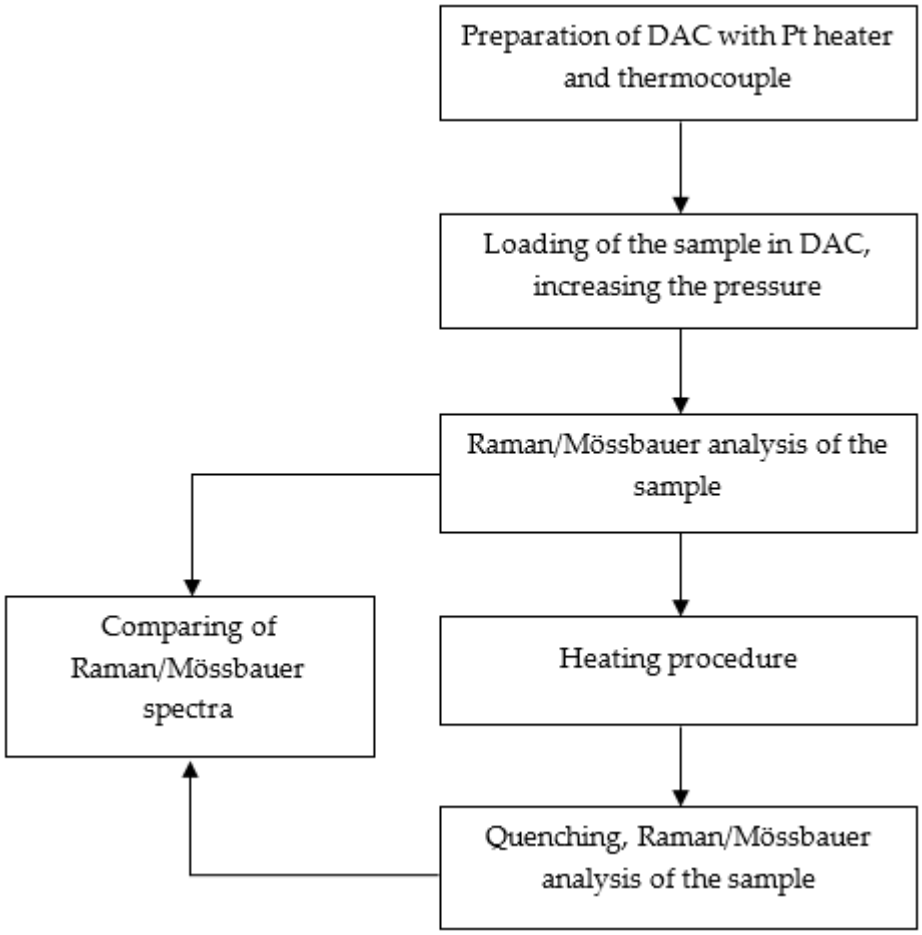

Figure S3. Summary of the completed experimental procedure.

Table S1. Characteristics of the crude oil from the Korchaginskoe deposit (Astrakhan region).

Number	Property	Units	Value
1	Pour point	°C	−24
2	Density at 20 °C	kg/m^3	817
3	Molecular weight	kg/kmol	211
4	Viscosity at 20 °C	mm^2/s	4.9
5	Asphaltene content	% weight	0.2
6	Silica gel pitch content	% weight	10.1
7	Petroleum wax content	% weight	5.6
8	Congelation point of paraffin	°C	+60
9	Sulphur content	% weight	0.543
10	Average diameter of dispersed particles	nm	290
11	Dispersed particles phase concentration	* 10^{-12} cm^{-3}	1.082

Table S2. Composition of the synthetic hydrocarbon system.

Symbol	Compound	Conc.[1], %	Symbol	Compound	Conc., %
3	propane C_3H_8	0.05	CG	cyclogexane, C_6H_{12}	1.33
i4	i-C_4, i-butane, $CH(CH_3)_3$	0.38	8	n-C_8, n-octane, C_8H_{18}	0.17
4	n-C_4, n-butane, C_4H_{10}	0.48	B	benzene, C_6H_6	0.40
4=	butylenes, C_4H_8	0.05	i9	i-C_9, i-nonanes	7.14
i5	i-C_5, i-pentane (2-methylbutane)	7.44	9	n-C_9, n-nonane, C_9H_{20}	0.54
5	n-C_5, n-pentane, C_5H_{12}	1.08	T	toluene, C_6H_5-CH_3	3.44
5=	pentenes, C_5H_{10}	0.13	i10	i-C_{10}, i-decanes	0.71
G1	2,3-dimethylbutane	0.15	M	ethylbenzene+meta-xylene + para-xylene, C_6H_5-C_2H_5 + meta-C_6H_5-$(CH_3)_2$ + para-C_6H_5-$(CH_3)_2$	22.30
G2	2-methylpentane	7.45	i11	i-C_{11}, i-undecanes	0.37
G3	3-methylpentane	4.06	O	ortho-xylene, ortho-C_6H_5-$(CH_3)_2$	3.64
6	n-C_6, n-hexane, C_6H_{14}	0.94	P	ethyltoluens	7.74
6=	hexenes, C_6H_{12}	0.23	i12	i-C_{12}, i-dodecanes	0.30
i7	i-C_7, i-heptanes	2.84	PC	pseudocumene, 1,2,4-trimethylbenzene	0.18
MCP	methylcyclopentane	3.28	A1	ethylxylenes	13.53
7	n-C_7, n-heptane, C_7H_{16}	0.16	A2	durol, 1,2,4,5-thetramethylbenzene	2.60
i8	i-C_8, i-octanes	6.13	A	aromatic hydrocarbons C_{11+}	0.78

[1] Molar concentration.

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