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Title: ^2H and ^{13}C NMR studies of orientational order and actual amount of *n*-heptane molecule in liquid crystal phases of the 7CB–*n*-heptane system

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Research highlights

- The orientational order parameter of each segment of the *n*-heptane molecule in the liquid crystal phase in the 7CB-*n*-heptane system was investigated using ^2H NMR.
- The actual molar fraction of the *n*-heptane molecule in the alky chain region of the smectic phase was obtained using ^2H and ^{13}C NMR.
- The process of formation of the swollen smectic phase of the 7CB-*n*-heptane system is represented.

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