The connection of inertia rotary moment with the chromatographic retention time in alkanes series. New retention indices

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Abstract

Earlier it was shown that cause of physicochemical properties oscillation and splitting into even and odd groups in the organic compounds homologous series is the rotational motion energy, determined by the molecule structure. In turn, the organic compound structure can be numerically described or expressed in terms of rotational motion inertia moment. It was logical to assume the correlation between the retention time and rotational motion inertia moment. In order to establish the connection of molecule rotational inertia moment with the chromatographic retention time, a mixture of normal structure alkanes (C_6 - C_{17}) was experimentally analyzed and corresponding graphs were constructed confirming the assumptions made. A new chromatographic index I_j was proposed, which has advantages over the Kovats index (I_K).

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