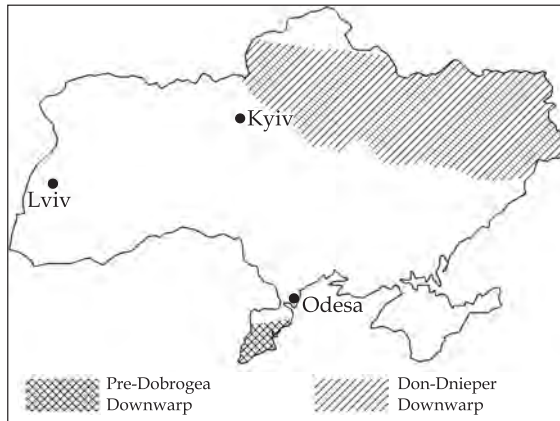
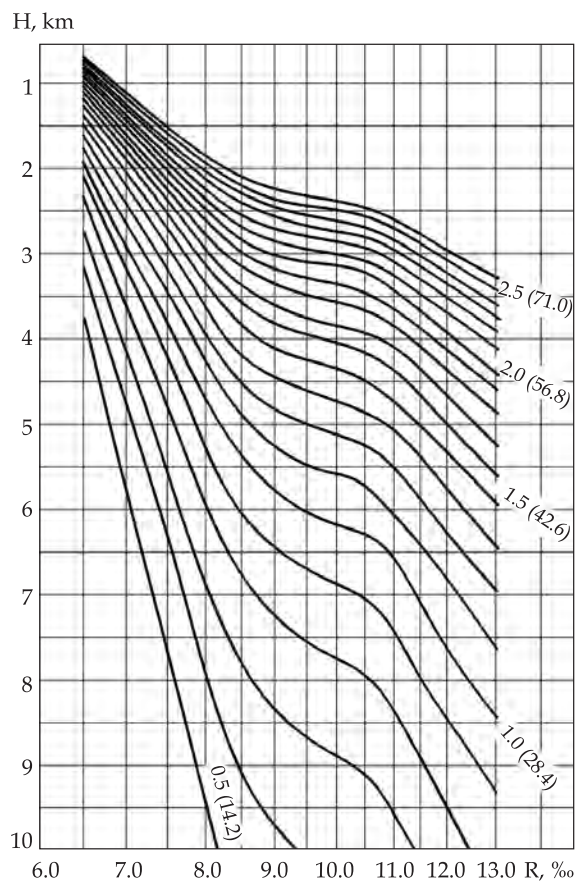


VITRINITE THERMOMETRY AS A TOOL OF PALEOGEOTHERMAL AND PALEOTECTONIC RECONSTRUCTIONS AREAS OF APPLICATION



Map of coal-bearing regions (the Don-Dnieper and the Pre-Dobrogea Downwarps) of vitrinite thermometry method tests



Nomographic chart of VRI dependence on depth with various parametric coefficients

Areas of Application

The method is to be used for determining the paleogeothermal and paleotectonic parameters of tectonic structures and catagenetic zoning of rocks to make a forecast of oil and gas content and a detailed reconstruction of paleogeothermal conditions for the formation of sedimentary rocks complexes of different regions

Specification

The method provides a computerized processing of vitrinite reflectance indices (VRI). The reference paleogeothermal section is used as a model. The algorithm is based on the normalization of VRI data for different depths using the paleotemperature function with further determination of paleogeothermal and paleotectonic parameters oriented to direct appraisal and exploration works

Advantages

The method has no analogs. It has been tested on the carboniferous sediments of the Don-Dnieper and Pre-Dobrogea Downwarps. For the depths with a lack of actual data the VRI is estimated by extrapolation. For structures that have a fairly complete stratigraphic cut it is possible to determine the geological time of maximum thermal penetration into rocks

Stage of Development. Suggestions for Commercialization

IRL2, TRL3

The degree of catagenesis, paleogeothermal gradients ($^{\circ}\text{C}/100\text{ m}$), paleodepths, and inversion amplitudes of tectonic structures for prediction and oil and gas occurrence are determined upon request

IPR Protection

IPR1, IPR3

Contact Information

Ruslan B. Havryliuk, Institute of Geological Sciences of the NAS of Ukraine; +38 044 239 74 16, e-mail: gavrilyuk.ruslan@gmail.com