

Contents

Streszczenie	7
Abstract	9
1. Introduction	11
1.1. Samples and ownership of results	12
2. Models of natural gas origin	13
3. Materials nad methods	16
3.1. Sampling process	16
3.2. Chemical composition of natural gas	17
3.3. Isotope composition of natural gas	18
3.4. Rock-eval pyrolysis	19
3.5. Statistical data analysis	19
4. Geological setting of the study area	21
5. Results	23
5.1. Isotope composition	24
5.2. Chemical composition	44
5.3. Rock-eval pyrolysis indices	54
5.4. Linear regression and correlation	63
6. Discussion	67
6.1. Isotope composition of methane, ethane and propane	69
6.2. Chemical composition – molecular indices	84
6.3. Geochemical pyrolysis parameters	86
7. Conclusions	90

8. References93

Appendix100

List of tables and supplementary materials111

List of figures113