European Coal Geology and Technology
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## Contents

Preface vii

**Regional coal reserves, coal basin tectonics and stratigraphy**

DORUSKA, J. The Czech Republic Energy Policy: conception and implementation in a market economy 1

PEšEK, J. & DOPITA, M. Coal production and usage in the Czech Republic 3

KUMPERA, O. Controls on the evolution of the Namurian paralic basin, Bohemian Massif, Czech Republic 13

KRS, M., PEšEK, J., PRUNER, P., SKOČEK, V. & SLEPIČKOVA, J. The origin of magnetic remanence components of Westphalian C to Stephanian C sediments, West Bohemia: a record of waning Variscan tectonism 29

DREESEN, R., BOSSIROY, D., SWENNEN, R., THOREZ, J., FADDA, A. OTTELLI, L. & KEPPENS, E. A depositional and diagenetic model for the Eocene Sulcis coal basin of SW Sardinia 49

INANER, H. & NAKOMAN, E. Turkish lignite deposits 77

KARAYIGIT, A. I. & WHATELEY, M. K. G. The origin and properties of a coal seam associated with continental thin micritic limestones, Selimoglu–Divrigi, Turkey 101

KARAYIGIT, A. I. & WHATELEY, M. K. G. Chemical characteristics, mineralogical composition and rank of high sulphur coking coals of Middle Miocene age in the Gökler coal field, Gediz, Turkey 115

ŢICLEANU, N. & DIACONITA, D. The main coal facies and lithotypes of the Pliocene coal basin, Oltenia, Romania 131

ŠišKOV, G. D. Bulgarian low rank coals: geology and petrology 141

STUKELOVA, I. E. Coal petrology and facies associations of the South Yakutian Coal Basin, Siberia 149

**Coal petrology and palaeontology**

GAYER, R. A., FOWLER, R. & DAVIES, G. Coal rank variations with depth related to major thrust detachments in the South Wales coalfield: implications for fluid flow and mineralization 161


KOSTOVA, I., MARKOVA, K. & KUNTSCHEV, K. Mössbauer spectroscopic investigation of low rank coal lithotypes 195

PREMOVIĆ, P. I., NIKOLIĆ, N. D. & PREMOVIĆ, M. P. Comparison of solid state $^{13}$C NMR of algal coals/anthracite and charcoal-like fusificates: further evidence for graphitic domains 201

ŠÝKOROVÁ, I., ČERNÝ, J., PAVLÍKOVÁ, H. & WEISHAURTOVÁ, Z. Composition and properties of North Bohemian coals 207

STEFANOVA, M. & MAGNIER, C. Aliphatic biological markers in Miocene Maritza-Iztok lignite, Bulgaria 219

SYBRYAJ, S. Floristic characters of the upper coal-bearing formation in the Transcarpathians 229
Mineral matter in coal and the environment

BAQRI, S. R. H. The distribution of sulphur in the Palaeocene coals of the Sindh province of Pakistan 237
CAVENDER, P. F. & SPEARS, D. A. Sulphur distribution in a multi-bed seam 245
BOUŠKA, V., PEŠEK, J. & ŽÁK, K. Values of δ34S in iron disulphides of the North Bohemian lignite basin, Czech Republic 261
JANKES, G., CVETKOVIĆ, O. & GLUMIĆ, T. Determination of different forms of sulphur in Yugoslav soft brown coals 269
PREMOVIĆ, P. I., NIKOLIĆ, N. D., PAVLOVIĆ, M. S., JOVANOVIĆ, L. S. & PREMOVIĆ, M. P. Origin of vanadium in coals: parts of the western Kentucky (USA) No. 9 coal rich in vanadium 273
SPEARS, D. A. Environmental impact of minerals in UK coals 287

Mining geophysics

GREGOR, V. & TĚŽKÝ, A. A well logging method for the determination of the sulphur contents in coal seams by means of deep gammaspectrometry 297
MACH, K. A logging correlation scheme for the main coal seam of the North Bohemian brown coal basin, and the implications for the palaeogeographical development of the basin 309
HOLUB, K. Seismic monitoring for rock burst prevention in the Ostrava-Karviná coalfield, Czech Republic 321
KALAB, Z. An analysis of mining induced seismicity and its relationship to fault zones 329
OPLUŠTIL, S., PEŠEK, J. & SKOPEC, J. Comparison of structures derived from mine workings and those interpreted in seismic profiles: an example from the Kačice deposit, Kladno Mine, Bohemia 337

Coal technology and coalbed methane

BARRAZA, J., CLOKE, M. & BELGHAZI, A. Improvements in direct coal liquefaction using beneficiated coal fractions 349
ASMATULU, R., ACARKAN, N., ONAL, G. & CELIK, M. S. Desulphurization of low-rank coals by low-temperature carbonization 365
WHATELEY, M. K. G., GENCER, Z. & TUNCALI, E. Amelioration of high organic sulphur coal for combustion in domestic stoves 371
DOUCHANOV, D. & MINKOVA, V. The possibility of underground gasification of Bulgarian Dobrudja’s coal 385
BOARDMAN, E. L. & RIPPON, J. H. Coalbed methane migration in and around fault zones 391
HOLUB, V., ELIAŠ, M., HRADZIKA, P. & FRANČÍK, J. Geological research into gas sorbed in the coal seams of the Carboniferous in the Mšeno-Roudnice basin, Czech Republic 409
GRZYBEK, I., GAWLIK, L., SUWAŁA, W. & KUZAK, R. Estimation method for methane emission from Polish coal mining 425
TAKLA, G. & VAVRUŠÁK, Z. Methane emissions and its utilization from Ostrava-Karviná collieries in the Upper Silesian coal basin, Czech Republic 435

Index 441
Preface

Despite the major reduction in the coal mining industry that has taken place in Europe over the last decade, most European countries remain strongly dependent on utilizing coal for both power production and in the steel industry. There is an increasing tendency to import cheaper coal from sources outside Europe and this trend is likely to continue and even expand. However, the need to use indigenous coal is essential and by improving knowledge of coal geology and technology, more efficient and competitive use of existing proven and indicated reserves will be possible.

This volume contains some 40 papers describing new research into coal geology and coal technology. These have been grouped into five sections dealing with separate aspects of the subject, so that related papers are placed together in the volume. However, some important coal basins have been researched by several different techniques, and papers on these topics have been included in the appropriate different sections. For example, the Upper Silesian basin, one of the most important Upper Palaeozoic coal basins in Europe, is covered by six papers in four of the sections of the volume. Similarly, the North Bohemian lignite basin is described in four papers placed in four different sections.

Coal deposits from twelve countries are covered in the volume, with the majority of papers (34) covering deposits in Central and Eastern Europe. Nevertheless, the geology and technology described, despite having a geographical bias, is of general applicability. The deposits together with the associated concepts and methods may not be well known in the west so that the papers and included references should provide an invaluable data source. Thus the volume can be seen as a companion volume to *European Coal Geology* (Whateley & Spears 1995) which concentrated on coal deposits in western Europe. The present volume also describes new and important research in western Europe, updating the coal geology provided in the earlier volume.

Section One includes 11 papers describing regional coal reserves, coal basin tectonics and stratigraphy. The regions covered include Bulgaria, the Czech Republic, Romania, Sardinia, Siberia, and Turkey. Amongst these interesting accounts are a paper by the late Professor Otto Kumpera, which relates the coal accumulation in the Upper Silesian basin to processes related to foreland basin tectonics, and a paper by Krs et al. documenting the waning effects of the Variscan orogeny in the Bohemian Massif by a detailed study of palaeomagnetism. Dreesen et al. describe an unusual coal basin in Sardinia in which coal forming environments are closely associated with carbonates and evaporites. The section also contains an important paper by Pesek & Dopita discussing the present and future energy requirements and associated environmental issues of the Czech republic, as an example of one of the developing eastern European countries.

Section Two covers various aspects of coal petrology and palaeontology in seven papers. These include papers describing unusual variations of coal rank with depth in Moravia (Dvorak et al.) where coals remain at relatively low rank despite being buried beneath the Carpathian thrust sheets, and in South Wales (Gayer et al.), where high levels of heat flow and reversals in rank increase with depth are attributed to fluid flow within the basin. Other authors describe the results of various analytical approaches to the study of coal petrology, including solid state $^{13}$C NMR studies of fusinites (Premovic et al.), Mössbauer spectroscopy of low rank coal lithotypes (Kostova et al.), and biochemical analysis of lignite (Stefanova & Magnier).

Section Three deals with mineral matter in coal and the environment. The six papers include the sulphur contents of Pakistan coals (Baqri), of Yugoslavian lignites...
Section Four contains five papers concerned with mining geophysics. These include well logging techniques applied to the North Bohemian lignite basin (Mach) and the use of a deep gamma spectrometer (Gregor & Tezky). Seismic monitoring for rock bursts (Holub) and mining induced seismicity (Kalab) are two aspects of seismic investigation covered in the section.

The final Section Five includes papers describing coal technology and coalbed methane. Liquefaction is discussed in two papers; one by Aleksic et al. using direct hydrogenation of low rank coals and the other describing experiments on beneficiated coal fractions (Barraza et al.). Desulfurization is also covered in two papers; one by Asmatulu et al. and the other by Whateley et al., both dealing with unusual techniques to treat high sulphur Turkish coals. Gassification and coalbed methane generation from mines is covered by Douchanov & Minkova, Gryzbek et al. and Holub et al., whilst Boardman & Rippon present an analysis of the influence of faults in coalbed methane production.

The editors would like to thank all the authors for submitting the papers which represent a selection of those originally presented at the Second European Coal Conference in 1995 in Prague. We would also like to thank the many geologists who reviewed the papers:


Many of the papers were written by authors whose first language is not English and this represented a problem not only for the authors but also for the reviewers. Both worked very hard to produce the present results. We have been continually amazed at the language skills of European geologists and hope that any slight errors remaining in the texts do not detract from the value of the volume. Sadly, one of the authors, Professor Kumpera, died before completing the final version of his major work on the geology of the Upper Silesian basin. Although his widow, Anna Kumperova, continued with the drafting of the diagrams, the conclusions have been added by the editors who accept responsibility for any errors inadvertently produced. We would also like to thank David Ogden, the staff editor at the Geological Society Publishing House for his continuing support and editing of this volume.

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Professor Jiri Pesek, Prague

Reference