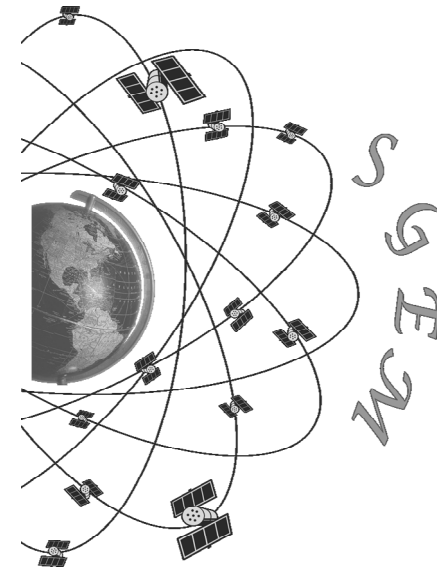


---

# 6<sup>th</sup> International Scientific Conference

---



**Modern  
Management of  
Mine Producing,  
Geology and  
Environmental  
Protection**

**SGEM 2006**  
**SGEM 2006**

**SGEM**  
**12 – 16 June 2006 Bulgaria**

---

*The International Organizing Committee of SGEM expresses its great thanks to the main organizer of the conference - Ministry of Environment and Water, Bulgaria, for the kind assistance and great help.*

*International Organizing Committee SGEM 2006*

**Copyright © 2006. International Scientific Conference SGEM**

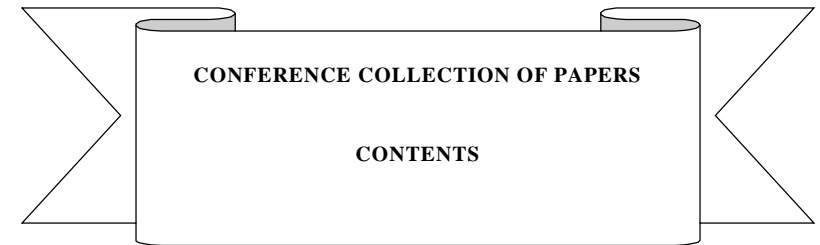
Printed in Sofia, Bulgaria

Total print: 600

**Contact:**

Email: [sgem@sgem.org](mailto:sgem@sgem.org)

URL: [www.sgem.org](http://www.sgem.org)



**SGEM 2006  
12 – 16 June 2006, Bulgaria**

---

## Book 1 Contents

### Section 1 Mining and Geology

#### 1.1. BENTONITE LOCALITIES IN THE NORTH-BOHEMIAN BROWN-COAL BASIN AND THEIR POTENTIAL UTILIZATION AS CLAY SORBENTS

**Rehor, M.**, Lang, T., Cablik, V., Mining College, TU Ostrava, *Czech Republic* **page 3**

#### 1.2. REQUIREMENTS FOR THE IMPROVEMENT OF THE OIL EXPLORATION AND PRODUCTION ACTIVITIES FROM THE SEDIMENTARY BASINS IN THE MIDDLE EAST

**Dr. Sen, S.**, Kerey, I. E., Istanbul University, Engineering Faculty, Dep. of Geology, *Turkey* **page 13**

#### 1.3. MINING METHOD SELECTION BY TOPSIS APPROACH (CASE STUDY OF REZA ABAD BALL CLAY & BAUXITE MINE)

**Dezyani, H.**, Department of Technical and Engineering, Azad University Branch of Science & Research, *Iran*  
**Ataei, M.**, Department of Mining and Geophysics Engineer, Shahrood University of Technology, *Iran*  
**Shahriar, K.**, Department of Mining and Metallurgical Engineer, Amirkabir University, *Iran*  
**Afshar, M.**, Department of Mining and Geophysics Engineer, Shahrood University of Technology, *Iran* **page 19**

#### 1.4. AUTOMATED SYSTEM FOR MANAGEMENT OF QUALITY OF THE EXTRACTED ORE IN OPENCAST MINE FOR MASS DETONATION

**Prof. Dr. Majdrakov, M.**, Benov, D., University of Mining and Geology “St. Ivan Rilski”, *Bulgaria* **page 27**

#### 1.5. EXPLOITATION OF THICK COPPER ORE DEPOSITS BY DOUBLE-LAYER ROOM AND PILLAR METHOD

**Prof. Butra, J.**, Debkowski, R., Kudelko, J., Nowak, J., CBPM Cuprum Ltd. - Research and Development Center, *Poland* **page 35**

#### 1.6. THE IMPORTANCE OF PARTICLE SIZE DISTRIBUTION AFTER BLASTING AND ARRANGEMENT STUDIES ON THIS BASIS

**Ozer, U.**, Ozdemir, K., Istanbul University, Institute of Science and Technology, *Turkey*  
**Prof. Dr. Kahrman, A.**, Karadogan, A., Tuncer, G., Istanbul University, Engineering Faculty, Mining Engineering Department, *Turkey* **page 43**

#### 1.7. SIMULATION OF DRILLING OPERATIONS

**Res. Assist. Karakurt, I.**, Aydiner, K., Karadeniz Technical University, Mining Engineering Department, *Turkey* **page 53**

#### 1.8. THE ANALYSIS OF BLAST-INDUCED GROUND VIBRATION AT CAN OPEN-PIT LIGNITE MINE IN TURKEY

**Prof. Dr. Kahrman, A.**, Ozer, U., Karadogan, A., Istanbul University, Engineering Faculty, Mining Engineering Department, *Turkey*  
**Aksoy, M.**, Adiguzel, D., Istanbul University, Institute of Science and Technology, *Turkey* **page 61**

#### 1.9. THE ECONOMIC IMPORTANCE OF KIZILDAG ULTRAMAFIC ROCKS, KIZILDAG, AKSEKI, SW TURKEY

**Assist. Prof. Doyen, A.**, Zedef, V., Selcuk University, *Turkey* **page 75**

#### 1.10. INVESTIGATION OF THE SALT-INDUCED DECAY IN BUILDING STONE

**Assist. Prof. Unal, M.**, Oksuzoglu, C, Berber, H., Selcuk University, *Turkey* **page 83**

#### 1.11. REMOVAL OF COPPER (CU) FROM MUNICIPAL SOLID WASTE (MSW) COMPOST USING BATCH WASHING

**Bayat, C.**, Beykent University, *Turkey*  
**Ozbas, E. E.**, Istanbul University, Faculty of Engineering, Environmental Eng. Dept., *Turkey*  
**Celik, T.**, Beykent University, *Turkey* **page 91**

#### 1.12. COLUMN FLOTATION OF BLACK COAL SLURRIES FROM AN OKR LOCALITY, DARKOV MINE

**Prof. Fecko, P.**, Stanclova, S., VSB-Technical University of Ostrava, Faculty of Mining and Geology, *Czech Republic* **page 99**

#### 1.13. EXAMINATION OF CALORIFIC LOSSES OCCURRING IN COAL STOCKPILES - A CASE STUDY

**Dr. Ozdeniz, A. H.**, Selcuk University, Mining Engineering Department, *Turkey*  
**Sensogut, C.**, Dumlupinar University, Mining Engineering Department, *Turkey* **page 107**

#### 1.14. INVESTIGATION OF ENRICHMENT POSSIBILITIES OF TOPRAKTEPE CHROMITE ORE (BEYSEHIR, TURKEY) BY SHAKING TABLE

**Agacayak, T.**, Zedef, V., Selcuk University, *Turkey* **page 113**

#### 1.15. INVESTIGATING THE EFFECTS OF MICROWAVE AND THERMOCHEMICAL PRETREATMENTS ON CONVERSION OF SLUDGE INTO WATER SOLUBLES TO INCREASE THE BIOGAS YIELD

**Res. Assist. Ergun Pehlivan, E.**, Taner, F., Taskaya, Z., Ates, H., Selcuk University, *Turkey* **page 119**

---

**1.16. PRELIMINARY EVALUATION OF STUDY OF SARBAND GRAPHITE DEPOSITS WITH GEOLOGICAL AND GEOPHYSICAL METHODS**

**Assoc. Prof. Ramazi (PhD), H.**, Dean of faculty of Mining, Metallurgy and Petroleum Engineering, Amirkabir University of Technology, *Iran*

Firoozi, A. A. MSc student, Mining, Metallurgy and Petroleum Engineering, Amirkabir University of Technology, *Iran*

Hosseinnejad, M. R. (Ph.D), Iran University of Science and Technology ( Arak Unite). *Iran* **page 129**

**1.17. ROCK MASS QUALITY EVALUATION IN BAKHTIARY DAM SITE USING SEISMIC METHODS**

**Assoc. Prof. Ramazi, H. (Ph.D)**, Ms.C.Hossaini, M., Amirkabir University of Technology, *Iran* **page 141**

**1.18. GEOLOGY, RESERVE ESTIMATION AND QUALITY ASSESSMENT OF THE SINDHALI LIMESTONE DEPOSIT, NEPAL**

**Joshi, G.R.**, Dwivedi, S. K., Department of Physics and Earth Sciences, University of the Ryukyus, *Japan*

Sah, R.B., Central Department of Geology, Tirbhuvan University, *Nepal* **page 153**

**1.19. EXPLOSION DUTIES TECHNOLOGIES – COMMON REQUIREMENTS AND WORK EXECUTION AND CONSECUTIVENESS**

**Hristanov, D.**, University of Mining and Geology “St. Ivan Rilski”, *Bulgaria* **page 163**

**1.20. DANGER IDENTIFICATION AND DEFINITION FOR THE ASPECTS CAUSING DAMAGES AND PROBLEMS DURING WORK WITH EXPLOSIVE MATERIALS**

**Hristanov, D.**, University of Mining and Geology “St. Ivan Rilski”, *Bulgaria* **page 171**

**1.21. REQUIREMENTS FOR HEALTHY AND SAFETY CIRCUMSTANCES, DOING AN EXPLOSIVE JOBS**

**Hristanov, D.**, University of Mining and Geology “St. Ivan Rilski”, *Bulgaria* **page 179**

**1.22. NORM STATEMENTS DEFINING THE EXECUTION OF INDUSTRIAL EXPLOSIVE WORKS AND ACTIONS WITH EXPLOSIVE MATERIALS**

**Hristanov, D.**, University of Mining and Geology “St. Ivan Rilski”, *Bulgaria* **page 187**

**1.23. ANOMALY/BACKGROUND SEPARATION BY APPLYING THE CORRESPONDENCE ANALYSIS METHOD IN THE ENJERD SKARN, IRAN**

**Assoc. Prof. Hezarkhani, A.**, Mining, Metallurgical and Petroleum Engineering Dept. Amirkabir University of Technology, *Iran*

Bagherifar, S. Ms.c Student, Department of Mining, Metallurgy and Petroleum Engineering, Amirkabir University of Technology, *Iran* **page 193**

**1.24. FLUID INCLUSION INVESTIGATIONS WITHIN THE SAR-CHESHMEH PORPHYRY CU DEPOSIT, IRAN**

**Assoc. Prof. Hezarkhani, A.**, Mining, Metallurgical and Petroleum Engineering Dept. Amirkabir University of Technology, *Iran* **page 205**

**1.25. HEAVY MINERAL PROSPECTING: A COMPLEMENTARY METHOD FOR GEOCHEMICAL EXPLORATION; A CASE STUDY IN SARAB, IRAN**

**Pourjabbar, A.**, Ms.c Student, Department of Mining, Metallurgy and Petroleum Engineering, Amirkabir University of Technology, *Iran*

**Assoc. Prof. Hezarkhani, A.**, Mining, Metallurgical and Petroleum Engineering Dept. Amirkabir University of Technology, *Iran* **page 221**

**1.26. STEPPING BEAM SUPPORTS TYPE GEROM-GP 250/1200 AT THE FACECOALS WITH SUBMINATION OF THE COAL BANKS FROM THE COAL BASIN IN JIU VALLEY - ROMANIA**

**Eng. Dr. Serafinceanu, A.**, Eng. MELCZER, M. C., Eng. SOARE, A., GEROM INVEST S.A., Petrosani, *Romania* **page 233**

**1.27. COMPARISON BETWEEN TOTAL STRAIN ENERGY AND CRUSHING ENERGY USING BOND’S INDEX IN GRANITE**

**Dr. Refahi, A.**, Ph.D Candidate of Amir Kabir University of Technology, *Iran*  
Prof. Rezai, A., Prof. Aghazadeh, J., Mining and Metallurgy Engineering Department of Amir Kabir University of Technology, *Iran* **page 239**

**1.28. THE INVESTIGATION OF GOLD AND SILVER RECOVERY FROM AKOLUK (ORDU -TURKEY) ORE**

**Dr. Celep, O.**, Alp, I., Deveci, H., Vıçıl, M., Yılmaz, T., Karadeniz Technical University, Mining Engineering Department, *Turkey* **page 251**

**1.29. 1-D VISUALIZATION OF WELL DATA AS AN EXAMPLE OF SECTIONS FROM SOUTH-WESTERN PART OF CENTRAL NORTH BULGARIA**

**Botoucharov, N.**, Sofia University “St. Kliment Ohridski”, *Bulgaria* **page 259**

**Section II**

**Ecology and Environmental Protection**

**2.1 THE HISTORY OF MINING AND RECLAMATION AND FIRST EXPERIENCE WITH NEW ECOLOGICAL RESTORATION METHODS IN NORTH-WESTERN BOHEMIA REGION**

**Rehor, M.**, Lang, T., Brown Coal Research Institute, *Czech Republic* **page 273**

## 2.2. SUSTAINABLE APPROACH TO ABANDONED OPEN-PIT MINES

**Assoc. Prof. Dr. Eng. Zhechev, N.**, University of Mining and Geology “St. Ivan Rilski”, *Bulgaria* **page 287**

## 2.3. PROGNOSIS FOR FIXED BED CLIPTILOLITE PERFORMANCE IN THE PROCESS OF METAL IONS REMOVAL

**Assoc. Prof. Dr. Dimitrova, S.**, Assoc. Prof. Kostova, I., Petrova, S., University of Architecture, Civil Engineering and geodesy, *Bulgaria* **page 297**

## 2.4. PURIFICATION OF WATER FROM FINELY DISPERSED OIL

**Assist. Al Afoori, M. Al**, Assoc. Prof. Dr. Mircheva, V., Tabakova, N., Beshkov, V., Institute of Engineering Chemistry, BAS, *Bulgaria* **page 307**

## 2.5. THE MANAGEMENT OF THE TOXIC WASTE IN THE AREA OF THE DANUBE DELTA BIOSPHERE RESERVATION

**Prof. Dr. Eng. Cristea, L.**, Romanian University of Science and Arts “Gheorghe Cristea”, *Romania* **page 317**

## 2.6. NEUTRALIZATION OF HEAVY METALS IN WATER AND SOILS BY IMMOBILIZATION INTO INSOLUBLE COMPLEXES, INABSORBABLE BY PLANTS

**Tabakova, N.**, Institute of Organic Chemistry with Centre of Phytochemistry, BAS, *Bulgaria*

Tabakova, S., Institute of Microbiology, BAS, *Bulgaria*

Beshkov, V., Institute of Chemical Engineering, BAS, *Bulgaria*

Pojarlijeff, I., Institute of Organic Chemistry with Centre of Phytochemistry, BAS, *Bulgaria*

Mircheva, V., Institute of Chemical Engineering, BAS, *Bulgaria* **page 325**

## 2.7. AIR POLLUTION STUDIES AT THE GEOPHYSICAL INSTITUTE, BULGARIAN ACADEMY OF SCIENCES

**Miloshev, N.G.**, Geophysical Institute, Bulgarian Academy of Sciences, *Bulgaria*

**page 337**

## 2.8. TRACE ELEMENTS IN FLY ASHES FROM “VARNA”, “BOBOV DOL”, “MARITZA IZTOK I”, “MARITZA III”, „REPUBLIKA” AND “ROUSSE IZTOK” POWER PLANTS, BULGARIA

**Shoumkova, A.**, University of Chemical Technology and Metallurgy, *Bulgaria*

Stoyanova, V., Institute of Physical Chemistry, Bulgarian Academy of Sciences, *Bulgaria* **page 349**

## 2.9. METHODOLOGICAL APPROACH FOR SELECTION OF POTENTIAL REGIONAL LANDFILL SITES ON THE TERRITORY OF BULGARIA

**Khrishev, Kh.**, Georgiev, V., Consortium GeoComplex Ltd, *Bulgaria*

Stoimenov, A. and Vatsева, R., BAS – Bulgaria, Ilieva, I., Toneva, M., Marinova, L., Consortium GeoComplex Ltd, *Bulgaria* **page 359**

## 2.10. ASSESSMENT OF THE CHARACTERISTICS AND METHODS FOR TREATMENT OF LANDFILL GAS, EXTRACTED FROM LANDFILL FOR NON-HAZARDOUS WASTE “SUHODOL”

**Assist. Prof. Eng. Ganev, I.**, Chief Assistant Eng. Dimitrov, B., Technical University, *Bulgaria* **page 375**

## 2.11. THE UNDERGROUND DISPOSAL OF THE INDUSTRIAL WASTES

**Debkowski, R.**, Kudelko, J., Wirth, H., Sadecki, Z., KGHM CUPRUM Ltd. Research and Development Centre, *Poland* **page 375**

## 2.12. COMPOST PRODUCTION EXPERIENCE FROM MUNICIPAL SOLID WASTE IN ISTANBUL

**Celik, T.**, Beykent University, *Turkey*

Borat, M., Istanbul University, Faculty of Engineering, Environmental Eng. Dept., *Turkey*

Bayat, C., Beykent University, *Turkey* **page 383**

## 2.13. REMOVAL OF COD WITH DICHLOROMETHANE AND TETRACHLORINEETHYLENE IN THE UP-FLOW ANAEROBIC SLUDGE BED REACTORS (UASB)

**Dr. Ozdemir, C.**, Dursun, S., Sen, N., Department of Environmental Engineering, Selcuk University, *Turkey* **page 395**

## 2.14. BIODEGRADATION OF HYDROGEN SULPHIDE (H<sub>2</sub>S) FROM THE WASTE GASES BY A PACKING MATERIALS COLUMN

**Dr. Dursun, S.**, Department of Environmental Engineering, Selcuk University, *Turkey* **page 405**

## 2.15. AN INVESTIGATION ON NATURAL RADIOACTIVITY FROM MINING INDUSTRY

**Esmeray, E.**, Environmental Engineering Department, Selcuk University, *Turkey*

**page 413**

## 2.16. INVESTIGATION OF HEAVY METALS IN MAIN WASTEWATER

**Dr. Karatas, M.**, Dursun, S., Ozdemir, C., Argun, M.E., Department of Environmental Engineering, Selcuk University, *Turkey* **page 421**

## 2.17. MODELLING OF SO<sub>2</sub> CONCENTRATION USING ARTIFICIAL NEURAL NETWORKS

**Dr. Dursun, S.**, Guklu, D., Engineering and Architecture Faculty, Environmental Eng. Dept., Selcuk University, *Turkey*

Celebi, F., Engineering Faculty, Environmental Eng. Dept., Aksaray University, *Turkey*  
Yilmaz, N., Selcuk University, Engineering and Architecture Faculty, Electrical-Electronics Eng. Dept., *Turkey* **page 435**

---

**2.18. INDUSTRIAL HEAVY METAL POLLUTION AND HAZARDOUS EFFECTS ON ECOLOGY: WASTE MANAGEMENT PERSPECTIVE**

**Argun, M.E.**, Dursun, S., Ozdemir, C., Karatas, M., Department of Environmental Engineering, Selcuk University, *Turkey* **page 445**

**2.19. DISTRIBUTION OF SOME PESTICIDE RESIDUES IN THE VEGETABLE AND FRUIT SAMPLES COLLECTED FROM KONYA LOCAL BAZAARS IN TURKEY**

**Ucan, N.**, Gur, K., Dursun, S., Environmental Engineering Department, Selcuk University, *Turkey* **page 453**

**2.20. AIR POLLUTION DISPERSION MODELING THROUGH THE USE OF ISCST3 PROGRAM AND A CASE STUDY FOR A CEMENT PLANT**

**Dursun**, Selcuk University, Environmental Engineering Department, *Turkey* **page 461**

Book 2 Contents

**2.21. OLD TAILINGS REHABILITATION WITH REGARD TO ENVIRONMENTAL IMPACTS AT THE MOOTEH GOLD MINE, IRAN**

**Res. Assist. Bakhtavar, E.**, Assoc. Prof. Shahriar, K., Mining and Metallurgical Engineer Department of Amirkabir University, *Iran* **page 3**

**2.22. CLIMATE CHANGE IMPACT ON WATER RESOURCES**

**Popovska, C.**, "St. St. Cyril and Methodius" University, Faculty of Civil Engineering, *Macedonia* **page 11**

**2.23. ECOLOGICAL CONSEQUENCES OF COPPER ORE PROCESSING**

**Assoc. Prof. Dr. Martin Banov**, Lidia Misheva, Radi Radev, Institute of Earth Sciences, BAS, *Bulgaria* **page 23**

**2.24. CONSIDERATIONS ON THE INFLUENCE OF ATMOSPHERE POLLUTANTS ON SOME SPECIES OF CULTIVATED AND SPONTANEOUS LIGNEOUS PLANTS**

**Prof. Ivanescu, L.**, Prof. Zamfirache, M. M., "Al. I. Cuza" University, *Romania* **page 35**

**2.25. THE EFFECT OF AIR POLLUTANTS FROM BORZESTI INDUSTRIAL CENTER (BACAU DISTRICT) UPON PHYSIOLOGICAL PROCESSES OF WOODEN ANGYOSPERMES**

**Prof. Zamfirache, M M.**, Prof. Ivanescu, L., "Al. I. Cuza" University, *Romania* **page 43**

**2.26. IMPACT OF SOME PGPR ON ZEA MAYS "IN VITRO" DEVELOPMENT AS ENVIRONMENTAL BIOTECHNOLOGY APPLICATION**

**Assis. Prof. Stefan, M.**, Olteanu, Z., Lacramioara, O., Prof. Simona, D., Vintu Smaranda, *Romania* **page 51**

**2.27. MICROBIOLOGICAL STUDY OF THIOBACILLUS SPECIES ISOLATED FROM MINE WATERS**

**Prof. Simona, D.**, Gavriloaiei, T., Assis. Prof. Stefan, M., Popa G., University Alexandru Ioan Cuza Iasi, Faculty of Biology, Microbiology Department, *Romania* **page 57**

**2.28. RADIOACTIVE AND TRACE-ELEMENT ENRICHMENT OF UPPERMOST BROWN COAL LAYERS: AN ENVIRONMENTAL ASPECT (KANSK-ACHINSK COAL BASIN, WEST SIBERIA)**

**Gavshin V.M.**, Melgunov M.S., Institute of geology and mineralogy of Russian Academy of Science, *Russia* **page 67**

**2.29. THE GEOMORPHIC CONTROL AND THE ENVIRONMENTAL IMPACT OF GEOCHEMICAL PROCESSES IN THE PANGEON MOUNTAIN AREA, NORTHERN GREECE**

**Papastergios, G.**, Georgakopoulos, A., Fernandez-Turiel, J.L., Gimeno, D., Vouvalidis, K., Christos, K., Aristoteleio Panepistimio Thessalonikis, School of Geology, Department of Petrology-Mineralogy-Economic Geology, *Greece* **page 75**

**2.30. EMAS IN COMPANIES, WHICH ARE ORIENTED ON MINING MINERAL RESOURCES**

**Assoc. Prof. Eng. Augustinova, CSc. E.**, Eng. Majkuthova, S., Eng. Izova, K., Faculty of Mining Ecology, Process Control and Geotechnologies, Technical University of Košice, *Slovakia* **page 83**

**2.31. RECENT STATE OF THE PHYTOPLANKTON IN THE AREA OF THERMO-ELECTRIC POWER STATION (TEPS) – VARNA /VARNA LAKE/**

**Petrova, D.**, Institute of Fisheries and Aquaculture, Varna, *Bulgaria*  
**Trayanov, T.**, Institute of Oceanology, Varna, *Bulgaria*  
**Gerdzhikov, D.**, Institute of Fisheries and Aquaculture, Varna, *Bulgaria* **page 89**

**2.32. DETERMINATION OF READILY BIODEGRADABLE COD (SS) IN DOMESTIC WASTEWATER**

**Dr. Guclu, D.**, Dursun, S., Engineering and Architecture Faculty, Environmental Eng. Dept., Selcuk University, *Turkey* **page 103**

**2.33. QUANTITY AND QUALITY STUDIES FOR CONTAMINATED UNDERGROUND WATER IN ABHAR PLAIN (NW OF IRAN)**

**Moghimi, H.**, Department of Geology, University of Payam-e Noor in Tehran, *Iran* **page 109**

**Section III**

**Geodesy and Mine Surveying**

**3.1. SLIP DISTRIBUTION FOR THE 1928 CHIRPAN AND PLOVDIV MAIN SHOCKS AND EARTHQUAKE TRIGGERING**

**Karakostas, V.**, Papadimitriou, E., Geophysics Department, Aristotle University of Thessaloniki, *Greece*

---

Gospodinov, D., Rangelov, B., Geophysical Institute, Bulgarian Academy of Sciences, Sofia, *Bulgaria* **page119**

### **3.2. MAPPING OF NATURE RISKS AND DISASTERS FOR EDUCATIONAL PURPOSES**

**Assoc. Prof. Dr. Bandrova, T.**, Department of Photogrammetry and Cartography University of Architecture, Civil Engineering and Geodesy, *Bulgaria*  
Assoc. Prof. Dr. Milan KONECNY, Laboratory on Geoinformatics and Cartography, Inst. Of Geography, Masaryk University  
**Czech Republik** **page 127**

### **3.3. THE TECHNIQUE OF VERY LONG BASELINE INTERFEROMETRY (VLBI) FIRST RESULTS OF PROCESSING OF VLBI DATA IN BULGARIA**

**Assoc. Prof. Zdravchev, I., PhD**, University of Architecture, Civil Engineering and Geodesy – Sofia, *Bulgaria*  
Research Assoc. Ivanova, I., dipl. eng., Central Laboratory of Geodesy, Bulgarian Academy of Science - Sofia, *Bulgaria* **page 135**

### **3.4. DEFORMATION ANALYSIS FOR RESULTS FROM GEODETIC MEASUREMENTS FROM DAM DEFORMATION INVESTIGATION**

**Assist. Prof. Antova, G.**, University of Architecture, Civil Engineering and Geodesy, *Bulgaria* **page 145**

### **3.5. MINE WORKING STABILITY CRITERION**

**Dr. Sc. (Tech.) Dryban, V.**, UkrNIMI National Academy of Science of Ukraine, *Ukraine* **page 151**

### **3.6. GEOTECHNICAL AND TECHNOLOGICAL CONDITIONS OF LEAKPROOF STORAGE YARDS CONSTRUCTION ON THE INSIDE DUMPS OF OPEN PITS**

**Kudelko, J. PhD**, Nowak, J. PhD, CBPM Cuprum Ltd. - Research and Development Center, *Poland* **page 161**

### **3.7. A DAMAGE IN A BUILDING EXCAVATION. REASONS AND LESSONS**

**M.Sc. Eng. Geol. Ivanov, I.**, M.Sc. Popov, N., M.Sc. Beikova, E., Department of Geotechniques, University of Architecture, Civil Engineering and Geodesy, *Bulgaria* **page171**

### **3.8. GEOMETRIC AND KINEMATIC EVOLUTION OF PROGRESSIVE DEFORMATION IN SHEAR ZONES, SAGHEZ GOLD MINE, NW IRAN**

**Assist. Prof. Hassani, H.**, Ghazanfari, M., Amirkabir University of Technology, *Iran* **page 179**

### **3.9. DESCRIPTION OF THE RELATIONSHIP BETWEEN PHYSICO-MECHANICAL PROPERTIES AND SIZE REDUCTION PROCESSING OF ROCKS**

**Kekec, B.**, Unal, M., Selcuk University, *Turkey* **page187**

### **3.10. PECULIARITIES OF FILTRATION IN HETEROGENEOUS ENVIRONMENT TAKING INTO ACCOUNT DIFFERENTIATION OF PRESSURE DISTRIBUTION IN PORES AND FRACTURES**

**Prof. Dr. Antsiferov, A. V.**, Antsiferov, V. A., Khodyrev, E. D., National Academy of Sciences of Ukraine (NANU), Ukrainian State Research and Design Institute of Mining Geology, Rock Mechanics and Mine Surveying (UkrNIMI), *Ukraine* **page 201**

### **3.11. RESULTS OF GRAVIMETRIC MEASUREMENTS FOR RESEARCH OF THE LANDSLIDE PROCESSES IN THE REGION OF BOTANICAL GARDEN, BAS, SOFIA.**

**Assoc. Prof. Dr. Gospodinov, S.**, Dr. Elena Peneva, University of Architecture, Civil engineering and Geodesy, *Bulgaria*  
Prof. Dr. Tsenkov, T., Civil engineering higher school “L. Karavelov”, Sofia, *Bulgaria*  
Eng. Georgiev, D., Central Laboratory of Geodesy-BAS, Sofia, *Bulgaria* **page 205**

### **3.12. MODERN REMOTE SENSING GROUND TECHNICAL INSTRUMENTS FOR RAPID CREATION OF PRECISE 3D DIGITAL MODELS OF EXTENSIVE INACCESSIBLE AND DANGER AREAS**

**Todorov, P.**, IOES Co., *Bulgaria* **page215**

### **3.13. RELATIONSHIP BETWEEN INTERACTIVE EDUCATION IN DIGITAL PHOTOGRAMMETRY AND IMAGE PROCESSING**

**Assoc. Prof. Marinov, B. D.**, Draganova, N. P., University of Architecture, Civil Engineering and Geodesy, *Bulgaria* **page227**

### **3.14. SINGLE FREQUENCY GPS TECHNOLOGY APPLICATION FOR DEFORMATION MONITORING OF ENGINEERING STRUCTURES**

**Kotzeva, K.**, University of Architecture, Civil Engineering and Geodesy, *Bulgaria* **page 237**

### **3.15. GPS NETWORKS AND GPS MEASUREMENTS IN THE REPUBLIC OF MACEDONIA**

**Prof. Ribarovski, R.**, Assoc. Prof. Dr. Srbinoski, Z., Assoc. Prof. Dr. Jovanov, J., Assist. Prof. Nasevski, M., Eng. Bogdanovski, Zl., Members of the High Geodesy department in Faculty for Civil Engineering, *Macedonia* **page 243**

### **3.16. LOCALIZATION OF SALT DEPOSITS BY USING OF COMBINED RELATIVE GRAVIMETRIC AND NAVIGATIONAL GPS MEASUREMENTS**

**Djorova, S.**, University of Architecture, Civil Engineering and Geodesy, Sofia, *Bulgaria* **page 251**

### **3.17. COMBINATION OF GPS AND SATELLITE ALTIMETRY DATA FOR GLOBAL IONOSPHERE MAPS**

**Res. Assist. Todorova, S.**, Hobiger, T., Prof. Dr. Schuh, H., Institute of Geodesy and Geophysics, Technical University Vienna, *Austria* **page 265**

---

**3.18. POSSIBLE APPLICATIONS OF A NETWORK OF PERMANENT GPS BASE STATIONS IN BULGARIA**

**Eftimov, J.**, Naviteq, *Bulgaria* **page 279**

**3.19. APPLICATION OF GPS TECHNOLOGIES IN GEODETIC PROCESSES**

**MA engineer Bojkov, B.**, Chief engineer in Mapex JSC, *Bulgaria* **page 289**

**3.20. 3D CADASTRE. WHAT? WHY? HOW?**

**Prof. Dr Gjorgjiev, V.**, Georgiev, G., Civil engineering faculty – Skopje, *Macedonia* **page 305**

**3.21. AN INVESTIGATION OF EFFECTING LANDSLIDE POTENTIAL OF GROUND VIBRATIONS CAUSED BY BLASTING AT KORKUTHAN QUARRY LOCATED AT BESIKDUZU, TRABZON**

**Dr. Cihangir, F.**, Ercikdi, B., Kesimal, A., Karadeniz Technical University, Mining Engineering Department, *Turkey* **page 311**

**3.22. DETERMINATION OF THE SAFE SLOPE ANGLES IN CHADORMALU IRON MINE OF IRAN USING EXPERIMENTAL, ANALYTICAL AND NUMERICAL METHODS**

**Jafari, A.**, Department of Mining Engineering, Faculty of Engineering, University of Tehran, *Iran*  
Gholamnejad, J., Amirkabir University of Technology, Department of mining, metallurgical and petroleum engineering, *Iran* **page 319**

**3.23. APPLICATION OF GPS RTK METHOD IN CONSTRUCTION OF SETTLEMENTS**

**MSc. Dipl. Eng. Paar, R.**, Prof. Dr. Novakovic, G., Prof. Dr. Dipl. Eng. Kapovic, Z., Faculty of Geodesy, University of Zagreb, *Croatia* **page 331**

**Section IV  
Informatics and Geoinformatics**

**4.1. USAGE OF DYNAMIC STRUCTURES FOR SHORT RECORD OF LARGE MATRICES**

**Assoc. Prof. Dr. Maldzhanski, P.**, University of Architecture, Civil Engineering and Geodesy, *Bulgaria* **page 343**

**4.2. INTERNET CADASTRAL INFORMATION SYSTEM**

**Baltadzhiev, D.**, Margaritova, M., „Mapex JSC”, *Bulgaria* **page 351**

**4.3. USE OF EROSION MODEL IN RECLAMATION AND REGENERATION OF THE AREA AFFECTED WITH MINING**

**Lang, T.**, Rehor, M., Halir, J., Brown Coal Research Institute, j.s.c. Most, *Czech Republic* **page 357**

**4.4. ENVIRONMENTAL PROCESS MONITORING USING INTELLIGENT GIS TECHNIQUES**

**Res. Assist. Dumitrascu, A.**, Res. Assist. Costache, G., Prof. Nitu, C., University "Politehnica" of Bucharest, *Romania* **page 369**

**4.5. GEOGRAPHIC INFORMATION SYSTEM ANALYSIS OF LANDSCAPE CHANGES IN SELECTED PAST MINING-AFFECTED AREA OF SOUTHWEST OSTRAVA**

**Assoc. Prof. Marschalko, M.**, Konstantin, R., Vojtech, D., VSB-Technical University Ostrava, *Czech Republic* **page 381**

**4.6. GLOBAL MAP DATA SET OF MACEDONIA & GLOBAL MAPPING PROJECT**

**M.Sc. Idrizi, B.**, State Authority for Geodetic Works - Skopje  
Prof. Ribarovski, R., Faculty for Civil Engineering – Skopje, *Macedonia* **page 401**

**4.7. APPLICATION OF FUZZY LOGIC IN MINING METHOD SELECTION**

**Dezyani, H.**, Department of Technical and Engineering, Azad University Branch of Science & Research, *Iran*  
Shahriar, K., Department of Mining and Metallurgical Engineer, Amirkabir University, *Iran*  
Afshar, M., Department of Mining and Geophysics Engineer, Shahrood University of Technology, *Iran* **page 419**

**4.8. ROAD TRAFFIC NOISE IN THE CITY OF KONYA MODELING USING BY GIS**

**Dr. Sahinkaya, S.**, Ozdemir, C., Department of Environmental Eng., Engineering-Architecture Faculty, Selcuk University, *Turkey* **page 427**

**4.9. APPLICATION OF ARCGIS FOR MODELING OF QUARRY AND MINE**

**Assist. Prof. Dr. Pavlov, P.**, Eng. Kashamova, V., University of Architecture, Civil Engineering and Geodesy, *Bulgaria* **page 433**

**4.10. DEVELOPMENT OF THE IT-INFRASTRUCTURE IN THE MINES OF NATIONAL HARD COAL COMPANY SA PETROSANI**

**Prof. Eng. Ph.D. Florian, B.**, University of Petrosani, *Romania*  
Eng. Ec., Sc.D., PURCARU – STAMIN ION Councillor at Ministry of Economy and Trade, *Romania* **page 445**

**4.11. GEOSTATISTICAL MODELING AND RESERVE ESTIMATION OF HYPOGENE ZONE IN SUNGUN PORPHYRY COPPER ORE DEPOSIT THROUGH ORDINARY KRIGING METHOD**

**Asghari, O.** Ph.D student, Mineral Exploration at Mining, Metallurgical and petroleum Engineering Dept. Amirkabir University of Technology, *Iran*  
Assoc. Prof. Hezarkhani, A., Mining, Metallurgical and Petroleum Engineering Dept. Amirkabir University of Technology, *Iran* **page 451**

---

**4.12. APPLYING THE BOTH GEOSTATISTICAL ESTIMATION AND THE SEQUENTIAL GAUSSIAN SIMULATION WITHIN THE CHOGHART FE DEPOSIT.**

**Asghari, O.** Ph.D student, Mineral Exploration at Mining, Metallurgical and petroleum Engineering Dept. Amirkabir University of Technology, *Iran*  
Assoc. Prof. Hezarkhani, A., Mining, Metallurgical and Petroleum Engineering Dept.  
Amirkabir University of Technology, *Iran* **page 463**

**4.13. TWO WAYS CLUSTER OF HEAVY MINERAL DATA TO IDENTIFY TYPE OF MINERALIZATION IN SRAB, IRAN**

**Pourjabbar, A.,** Ms.c Student, Department of Mining, Metallurgy and Petroleum Engineering, Amirkabir University of Technology, *Iran*  
Assoc. Prof. Hezarkhani, A., Mining, Metallurgical and Petroleum Engineering Dept.  
Amirkabir University of Technology, *Iran* **page 477**

**4.14. DESIGN OF OPEN PIT PUSH-BACKS IN CHADORMALU IRON MINE OF IRAN USING SURPAC**

**Gholamnejad, J.,** Osanloo, M., Amirkabir University of Technology, *Iran*,  
Pashaei, K. - Surpac Minex Group Agent, *Iran*  
**page 487**

**4.15. TIME-SERIES MODEL & FORECAST OF HYDRO-CLIMATIC DATA IN BASIN AREA OF RIVER BREGALNICA**

**Jovanovski, V.,** Prof. Dr., Todor Delipetrov, Faculty of Mining & Geology, Stip,  
*Macedonia* **page 495**

**Section V**

**European Integration and International Cooperation**

**5.1. OPTIMIZATION OF THE SYSTEM – “UNIVERSITY EDUCATION”**

**Prof. Dr. Majdrakov, M.,** University of Mining and Geology “St. Ivan Rilski”,  
*Bulgaria* **page 507**