FACULTY OF HYDROTECHNICAL ENGINEERING



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RESEARCH CENTER FOR MODELLING, DESIGNING AND BEHAVIOR MONITORING OF THE HYDROTECHNICAL DEVELOPMENTS

GENERAL PRESENTATION

The center was set up in 2001 and certified by the Romanian Research Authority in Higher Education (CNCSIS certificate no. 99 / CC-C, 11 May 2001).

The main research fields of the center lies generally on water engineering, having as subfields:

- Water constructional works
- > Urban and rural sanitation
- Land reclamation arrangements.

Based on the long experience of the researchers and the existing research infrastructure, the center is able to manage engineering projects in fields connected to water engineering.

MAIN ACTIVITIES

- managing research projects in water engineering
- design and technical assistance in Hydrotechnical structures
- water constructional works
- rivers regulation works
- waterways and harbors
- modern technologies in water engineering
- drinking and industrial water supply network and plants
- waste water treatment plants
- sewage network
- water biology and chemistry
- water quality monitoring
- numerical modeling in surface water and groundwater flow
- > numerical modeling of the pollutants transport in groundwater
- land reclamation and improvement, irrigations and drainages
- > rural sustainable development
- soil science studies and erosion controls
- polluted soils rehabilitation
- surveying, cadastre
- waste disposal sites design and monitoring

PROJECTS

RESEARCH TEAM

Ion, M., Lazar, Gh., Constantin, T.A., Nicoara, S.V., Popescu-Busan, A, Garbaciu, C., Ghitescu, A. Expertise of the Mures river right bank in the area of the scaffold bridge foot for transportation pipes at Sanpetru German – Bodrog storage

Contract no. 656/ 2007 Value: 1,610 RON

Beneficiary: S.C.PETROM SA TIMISOARA

Technical assistance regarding the achievement of the required monitoring and control devices at Valiug, Secu, Gozna and Timis - Trei Ape dams.

Contract no. 689/ 2007 Value: 5,000 RON

Beneficiary: S.C. TMK-RESITA S.A

Behavior monitoring at the hydrotechnical constructions of Valiug, Secu, Gozna and Timis – Trei Ape permanent water reservoirs.

Contract no. 705/2007 Value: 30,000 RON

Beneficiary: S.C. TMK-RESITA S.A

Expertise of the Timis - Trei Ape dam crest and of the over crossing track.

Contract no. 707/ 2007 Value: 5, 000 RON

Beneficiary: S.C. TMK-RESITA S.A

Feasibility study for the Sulinis and Fiac stream courses regulation in the area of Bata locality, Arad County

Contract no. 708/ 2007 Value: 10,000 RON

Beneficiary: Bata Municipal Council

Technical documentation required for obtaining the water management permit for Valiug, Secu, Gozna and Timis – Trei Ape dams

Contract no. 709/ 2007 Value: 20,000 RON

Beneficiary: S.C. TMK-RESITA S.A

Consolidation of the Mures river right bank in the area of the scaffold bridge foot for the mineral oil transportation pipes at Sanpetru German – Bodrog storage

Contract no. 734/ 2007 Value: 14,000 RON

Beneficiary: S.C. PETROM SA TIMISOARA

Expertise - implications of locating the new Caransebes Prosecutor's office building in Timis river major streambed upon high water flow

Contract no. 768/ 2007 Value: 8,750 RON

Beneficiary: S.C. TEHNOPROIECT COMTRANS

S.R.L

RESEARCH TEAM

Ion, M., Doandes, V.

Structure behavior monitoring in safety working conditions for the S.K.TMK – Resita S.A. wharf construction located on the Gozna water reservoir right bank

Contract no. 710/ 2007 Value: 5,000 RON

Beneficiary: S.C. TMK-RESITA S.A

Cotoroaia stream arrangement on Voloiac-Cotoroaia sector, Mehedinti county

Contract no. 585/ 2007 Value: 2,000 RON

Beneficiary: S.C. DEVIS PROTEAM SRL

Dimensioned plan in digitate format, performed through the cross – sectional profiles method in order to develop the sewerage system design in Gavojdia village, Timis County

Contract no. 632/ 2007 Value: 7,000 RON

Beneficiary: SC. P&CONSULT SRL

Dimensioned plan in digitate format, performed through the cross – sectional profiles method in order to develop the sewerage system design in VV Delamarina village, Timis County

Contract no. 633/ 2007 Value: 7,000 RON

Beneficiary: SC. P&CONSULT SRL

RESEARCH TEAM

Nemes I., Doandes, V., Constantinescu L., Man, T.E

Amelioration perimeters in agrarian land stock (Herneacova – Recas, Otelec, Uivar)

Contract no. 765/2007 Value: 5,117 RON Beneficiary: DADR TIMIS

RESEARCH TEAM

Orlescu, M., Man, T.E., Nicoara, S.V., Constantin T.A., Popescu-Busan, A.I., Beilicci, R.

The rehabilitation of the irrigations in the Aranca drainage-irrigations system for 590 hectares, in the Saravale area

Contract no. 696/2007 Value: 25,000 RON

Beneficiary: S.C. Genagricola SRL

RESEARCH TEAM

Beilicci, R., Beilicci, E.,

Water supply system in Bogda, Timis County

Contract no. 799/ 2007 Value: 17,993 RON

Beneficiary: Bogda Local Council

RESEARCH TEAM

Man, T.E., Constantinescu, L., Halbac Cotoara, R., Modra, C.

Complex moddels and methods for research in rural sustainable development in Romania

Contract no. 78GR/2007 Value: 10,000 RON Beneficiary: CNCSIS

RESEARCH TEAM

Badaluta, M.C.

Researches regarding the identification, understanding, simulation and calculus mechanism of the flooding caused by breakdown of the linear protection systems

Contract no. TD code 10 no. 169/2007

Value: 28,300 RON Beneficiary: CNCSIS

RESEARCH TEAM

David, I., Sumalan, I., Beilicci, R.,

Providing services for implementation of models and training in the field of groundwater and solute transport modelling

Contract no. 737/ 2007 Value: 3,000 Euro

Beneficiary: Dutch Ministry of Economic

Affairs (EVD), The Netherlands

PUBLICATIONS

BOOKS

- Constantinescu, L., Organizing Teritory, Mirton Publishing House, Timisoara 2007, 214 pages, ISBN 978-973-52-0260-6, (published in Romanian)
- Doandeş, V., Applied topography, Second Edition, Politehnica Publishing House, Timisoara, 2007,424 pages, ISBN 978-973-625-547-2 (published in Romanian)
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- 4. Man T.E., Sabău N.C., Cîmpan G., Bodog M., *Water improvements*, Vol.I şi II, Aprilia Print Publishing House, Timişoara, 2007, 430 pages, ISBN 973-99452-0-1 (published in Romanian)
- Man T.E., Mateoc Sîrb N., Rural and regional sustainable development of the Romanian village, Politehnica Publishing House, Timişoara, 2007, 370 pages, ISBN 978-973-625-546-5 (published in Romanian)
- Man T.E., Hălbac Cotoară R., Receanu R., Problems book, Politehnica Publishing House, Timișoara, 2007, 109 pagini, ISBN 978-973-625-551-9 (published in Romanian)
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Politehnica Publishing House, Timişoara, 2007, 148 pages, ISBN 978-973-625-421-5 (published in Romanian)

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- Bertici, R., Gh. Rogobete, D. Beutură, Grozav, A., Pellic Vertisoils and Vertisoils in Timiş County, Scientifical papers. Agriculture, Part II, 5th Session – Soil Sciences, 2007, Timişoara, ISSN 1221-5279, pp. 81-84
- Rogobete, Gh., Beutură, D., Grozav, A., Nemes, I., Soil Acidification by Ferrolysis in Pedological Sequence of Muntele Mic, Caras-Severin, County, Factors and Soil Processes in the Temperate Zones, ISSN 1582-4616, pp. 67-74
- Rogobete, D. Grozav, Hydric Soils of Banat, Scientifical papers. Agriculture, Part II, Session – Ecological Restauration and Management of Rural Environment, Timişoara, 2007, ISSN 1221-5279, pp. 309-314
- Nemeş I., Researches Regarding Soil Erosion and Measures to Fight it on the Declivitous Terrains Located in the Cornea Area (Caraş – Severin County). Their Impact on the Locality, Scientifical papers. Agriculture, Part II, 5th Session – Soil Sciences, 2007, Timişoara, ISSN 1221-5279, pp.45-50
- Nemeş I., Solutions to Improve Land Slip in the Sadova Veche Area (Caraş –Severin County), Scientifical papers. Agriculture, Part II, 5th Session – Soil Sciences, 2007, Timişoara, ISSN 1221-5279, pp. 51-54
- Nemeş I., Constantinescu L., Geogen Pollution with Heavy Metals in Bistra Area, Caraş – Severin County, Scientifical papers. Agriculture, Part II, 5th Session – Soil Sciences, 2007, Timişoara, ISSN 1221-5279, pp. 69-75
- Constantinescu L., Nemes I., Modifications of the Chemical Properties of Soils in the Aranca Surface-Drainage System (Timiş County), Scientifical papers. Agriculture, Part II, 5th

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- 11. Jura C., Brata, S., *Networks Optimizing for Plastic Pipes Water Supply Systems*, Scientific Bulletin of Politehnica University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp. 67-70
- Hălbac-Cotoară R., Drainage Arrangements Management for Nutrients Control, Scientific Bulletin of Politehnica" University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp. 27-30
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- 14. Wehry, A., Orlescu, M., Costescu, I.A., Culverts with Hydrodynamic Profiles in Talus or with Tympan. Hydraulic Laboratory Studies and General Prescription Related to the Static Calculus of the Inserted Tympanes, Scientific Bulletin of Politehnica University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp.31-38
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- 17. Man T. E., Receanu R., G. Olaru C. R., Sustainable Rural Development in Europe, Scientific Bulletin of "Politehnica" University of Timişoara, Romania, Transactions on

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- Wehry, A., Nuţaş-Vancia G., Subirrigation Limited by the Secondary Soil Salting, Scientific Bulletin of "Politehnica" University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp. 57-60
- Jura C., Staniloiu, C., Optimizing Studies of the Sewerage Systems Made Up of Plastic Materials, Scientific Bulletin of "Politehnica" University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp. 61-66
- Beilicci R., Beilicci E., Iliuta C., 3 D Modeling for Inflow Of Water Into an Excavation Pit, Scientific Bulletin of "Politehnica" University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp. 15-18
- Wehry, A., Steolea, P., Irrigation by Overflow in Strips, Combined with the Underground Drainage, on Sloping Terrains, Scientific Bulletin of "Politehnica" University of Timişoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.1, ISSN 1224-6042, pp. 23-26
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- 34. Gheorghiu, M., In memoriam Emeritus professor engineer Victor Gheorghiu, Scientific Bulletin of "Politehnica" University of Timișoara, Romania, Transactions on Hydrotechnics, Vol. 52 (66), 2007, No.2, ISSN 1224-6042, pp. 55-56
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- 32. Beilicci, E., Beilicci R., *The modelling of the liquid runoff into temporary hydrographic network*, 32nd Internationally Attended Scientific Conference of the Military technical Academy, Modern technologies in the 21st Century, Bucharest, ISBN 978-973-640-127-5
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- 34. Lazăr Gh., Ion M., Nicoară Ş.V., Constantin A.T., Buşan A.I., Ghițescu A., *1D Numerical modeling of the water flow in a low height retention structure provided with seven spillway gaps in case of an accidental high waters*, Hydro 2007, New approaches for a new era, International Conference and Exibition, 2007, Granada, Spain
- 35. Nemes, N., Water quality degradation on Bistra River as anthropic activity effect,, Integrated Water Resources Management, Workshop, 3rd Edition, ISBN 978-973-638-326-7

PhD THESIS

- 1. Garbaciu, A., *The study and modeling of the ground water deferization by in-situ methods* Ph.D supervisor: Prof. Dr.Eng. David, I.
- 2. Marinescu, R., *Contribution to the water losses reducing in the water supply systems*, Ph.D supervisor: Prof. Dr.Eng. Mirel I.
- 3. Bertici R., *Banat's soils and their influence on the constructions*, Ph.D supervisor: Prof. Dr.Eng. Rogobete Gh.
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- 8. Balica, S. Contributions to the optimization of the arrangement schemes by non-structural solutions, Ph.D supervisor: Prof. Dr.Eng. Cretu Gh
- 9. Mocanu, F., *Ecohydrology modeling of some* aquatic systems, Ph.D supervisor: Prof. Dr.Eng. Cretu Gh.

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- Crisan, M., Environmental Monitoring Systems
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- > Chebutiu, A., Rehabilitation strategies of the industrial estate and their environmental impact
- Ghitescu, A., Mesh less methods for hydraulic structures
- ➤ Gardan, M., The study and modeling of the sanitary protection zones in complex hydrogeological conditions
- ➤ David, C., The impact of the terrestrial ways on the groundwater regime

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- Olaru, I., (first year Phd Student)
- Szigyarto,I., (first year Phd Student)
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- Paian, S., Water purification plant for surface water
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- Stoica D. M., The forecast of water quality evolution in Cibin river for the middle and lower basin

- Merloi L., The land reclamation and improvement potential, workable solution for Banat
- Nuţaş Vancia G., Land reclamation and improvement evolution and efficiency in Timiş county
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- ➤ Blaj, C., Mathematic modeling of drainage arrangement efficiency
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- > Steolea, P., Gravitational irrigation for slope lands, as irrigation methods in relation with pressure
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- Maries, C., Water flow around a retention structure with low water head
- Riiosu, J., High waters management
- ➤ Botos, M., Running behavior study for temporary storage dams in case of turning into permanent ones
- ➤ Ciobanu, P., Stress state study in the of abutment pier of the weir dams under tainted gate action depending on the hinge geometry
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- Orlescu, C., Water tightening accomplishment an hydrotechnical retention and protection works
- > Schipor, F., Waste water treatment plants optimization for small and medium localities
- ➤ Marinescu, L., The calculus of the buried hydrotechnical constructions

PERSPECTIVES

- updating the European trends in water engineering and applying them to Romanian realities
- ensuring technical assistance for the design groups and companies in order to provide water supply projects for small communities
- a complete inventory of the companies acting in the Romanian west side of the country

regarding research demands and in this way to set up new research projects

- studies, research and design for rehabilitation of the land reclamation arrangements
- enlarging the international cooperation in the field of water engineering researches
- further co-operation between our research center and other research centers from Iasi, Bucharest and Constanta Universities in the

field of the groundwater management and its protection against pollution

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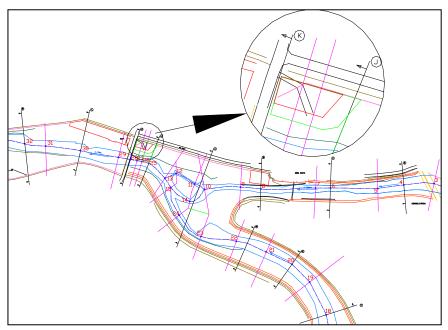
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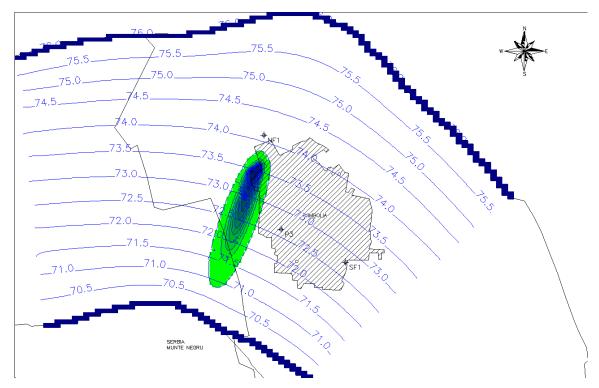
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Studies regarding the dams safety running



Studies regarding the location of the building in the major valley of the river



Studies. Modeling Landfill sites