ROMÂNIA
UNIVERSITATEA BABEŞ-BOLYAI CLUJ-NAPOCA
Str. Mihail Kogălniceanu, nr. 1, 400084 Cluj-Napoca
Tel. (00) 40 - 264 - 40.53.00*; 40.53.01; 40.53.02 ; 40.53.22
Fax: 40 - 264 - 59.19.06
E-mail: staff@staff.ubbcluj.ro

**RECTORATUL**

# Universitatea Babeş-Bolyai
# Competiţia Excelenţei 2010

## Dosar individual

## Notă: Toate datele se referă la perioada 2005-2009

| | |
|---|---|
| **Nume, prenume, grad did.** | **GROSAN TEODOR, LECTOR** |
| **Facultatea, Catedra** | Matematica si Informatica, Matematica Aplicata |
| **Domeniul ştiinţific** | Matematica, Mecanica |
| **Adresa paginii web personale** | www.math.ubbcluj.ro/~tgrosan |
| **Adresa e-mail** | tgrosan@math.ubbcluj.ro |

## Criteriul I – Output

**1. Articole ştiinţifice publicate în reviste indexate ISI (cu menţionare factorului de impact în cazul celor cotate)**

1) N. Siedow, D. Lochegnies, T. Grosan and E. Romero, Application of a new method for radiative heat transfer to flat glass tempering, *Am. Cer. Soc*., Vol. 88, pp. 2181-2187, 2005. **(IF 1.586)**
2) Ş. M. Şoltuz, Teodor Grosan, Data Dependence for Ishikawa Iteration When Dealing with Contractive-Like Operators, *Fixed Point Theory and Applications*, Vol. 2008, Article ID 242916, 7 pages.( doi:10.1155/2008/242916). **(IF 0.728)**
3) S.R. Pop, T. Grosan, I. Pop, Effect of Variable Viscosity on Free Convection Flow in a Horizontal Porous Channel with a Partly Heated or Cooled Wall, Revista de Chimie, Vol.59, pp. 1210-1212, 2008. **(IF 0.389)**
4) T. Grosan, R. Pop, I. Pop: Thermophoretic deposition of particles in fully developed mixed convection flow in a parallel-plate vertical channel, *Heat and Mass Transfer*, Vol. 45, pp. 503-509, 2009. **(IF 0.873)**
5) T. Grosan, C. Revnic, I. Pop, D.B. Ingham, Magnetic field and internal heat generation effects on the free convection in a rectangular cavity filled with a porous medium, Int. J. Heat Mass Transfer, Vol.52, pp.1525-1533, 2009.**(IF 1.894)**
6) C. Revnic, T. Grosan, J. Merkin and I. Pop, Mixed convection near an axisymmetric stagnation point on a vertical cylinder, *Journal of Engineering Mathematics*, Vol. 64, pp. 1-13, 2009. **(IF 0.69)**
7) C.Revnic, T.Grosan, I.Pop and D.B. Ingham, Free convection in a square cavity filled with a bidisperse porous medium, Int. J. Thermal Sciences, Vol. 48, pp. 1876-1883, 2009.**(IF 1.683)**
8) T. Grosan, · C. Revnic, · I. Pop, and D.B. Ingham, Magnetohydrodynamics oblique stagnation-point flow, *Meccanica*, Vol. 44, pp. 565 – 572, 2009.**(IF 0.604)**

**2. Articole ştiinţifice publicate în ISI proceedings**

1) C.Revnic, T.Grosan and I.Pop: Unsteady boundary layer flow and heat transfer over a stretching sheet, International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Corfu, Grecia, 16-20 September 2007. In: *American Institut of Physics (AIP) – Conferences Proceedings*, November 2007, 1046, 119, 2008
2) O. Capatina, T. Grosan, R. Trimbitas, Wind Potential determination in a known area, Proceedings of 2008 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR 2008), 22-25 May 2008, Vol. 3, pp. 296-299, Digital Object Identifier 10.1109/AQTR.2008.4588931

**3. Articole ştiinţifice indexate în BDI (din lista CNCSIS)**

1) T. Grosan and I. Pop, Radiation effects on free convection from a vertical cone embedded in a fluid saturated porous medium, Studia Univ. Babes-Bolyai, Mathematica, vol. 50, pp. 67-75, 2005.
2) T. Grosan, I. Pop A note on the effect of radiation on free convection over a vertical flat plate embedded in a non-Newtonian fluid saturated porous medium, *Int. J. Appl. Mech. Engng*.,Vol. 11, pp. 715-722, 2006.
3) T. Grosan, T.Mahmood and I. Pop, Thermal radiation effects on fully developed free convection in a vertical rectangular square duct, Studia Univ. Babes-Bolyai, Mathematica, vol. 51, pp. 117-127, 2006.
4) T. Grosan, I. Pop, Non-linear density variation effects on the fully developed mixed convection flow in a vertical channel, Bulletin of Transilvania Universiy of Brasov, vol. 13,pp. 171-177, 2006.
5) C.Revnic, T.Grosan and I. Pop: Unsteady boundary layer flow and heat transfer over a stretching sheet: heat flux case, Revue d'Analyse Numérique et de Théorie de l'Approximation, vol.36, pp. 175-186, 2007.
6) M. Kumari, T. Grosan, I. Pop, Boundary layers growth on a moving surface due to an impulsive motion and sudden increase of wall heat flux, Int. J. Appl. Mech. Engng., Vol. 13, pp.203-215, 2008.
7) C. Bercea, T. Grosan, I. Pop,. Heat Transfer in Axisymmetric Stagnation Flow on a Thin Cylinder, Studia Univ. Babes-Bolyai, Mathematica, vol. 53, no. 2, pp. 119-132, 2008
8) T. Grosan, I. Pop and S.R. Pop, Radiation and variable viscosity effects in forced convection from a horizontal plate embedded in a porous medium, Stuida Univ. Babes-Bolyai, Mathematica, vol.53, no. 3, pp.13 – 23, 2008.
9) C. Revnic, T. Grosan, I. Pop, Effect of the magnetic field and heat generation on the free convection flow in a tall cavity filled with a porous medium, Revue d'Analyse Numérique et de Théorie de l'Approximation, vol.37, pp. 197-208, 2008.
10) C.Revnic, T.Grosan, I.Pop and D.B. Ingham, Natural convection in an inclined square cavity with heated and cooled adjacent walls and filled with a porous medium, The Open Transport Phenomena Journal, Vol. 1, pp.20-29, 2009.

**4. Alte articole ştiinţifice/capitole publicate în reviste/volume cu referenţi (peer-reviewed)**

1) S.R. Pop, T. Grosan, I. Pop, Radiation Effects on the Flow near the Stagnation Point of a Stretching Sheet, *Technische Mechanik*, Vol. 25, pp.100-106, 2005.
2) M. Kumari, T. Grosan, I. Pop, Rotating Flow of Power-Law Fluids over a Stretching Surface, *Technische Mechanik*, Vol. 26, pp. 11-19, 2006.
3) T. Grosan, I. Pop, Thermal radiation effect on fully developed mixed convection flow in a vertical channel, Technische Mechanik, Vol. 27, pp. 37-47, 2007.
4) A. Postelnicu, I. Pop, T. Grosan, Mixed convection over a vertical flat plate embedded in a porous medium with heat generation, *Proceeding of 4th International Conference on Applications of Porous Media, August 10 – 12, 2009, Istanbul, TURKEY*, pp. 273 – 277, 2009.

**5. Cărţi ştiinţifice publicate în edituri internaţionale**

**6. Cărţi ştiinţifice publicate în edituri naţionale acreditate**

**7. Editor de volume publicate în edituri naţionale şi internaţionale**

**8. Brevete internaţionale**

**9. Brevete naţionale**

**10. Impact tehnologic al brevetelor: resurse financiare extrabugetare atrase în relaţie cu economia**

**11. Realizări artistice naţionale şi internaţionale (Domeniul Arte)**
(Expoziţii, spectacole, concerte, publicaţii, filme, înregistrări)

# Criteriul II – Prestigiu profesional

### 1. Citări ale articolelor ISI listate la Criteriul I

Lucrarea 1:

i) Brown, M., A review of research in numerical simulation for the glass-pressing process, *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture* 221 (9), pp. 1377-1386, 2007.

ii) Brown, M., Computer simulation of the glass pressing process: A review**,** *International Journal of Materials and Product Technology* 33 (4), pp. 335-348, 2008.

iii) El Hitti G, Nemer M, El Khoury K, Transient Radiation and Conduction Heat Transfer in Glass Sheets by the Thin Layer Approximation, JOURNAL OF HEAT TRANSFER-TRANSACTIONS OF THE ASME, 132(2), Article Number: 023506, 2010

Lucrarea 3:

i) Dima, S.-O., Sarbu, A., Mara, L., Radu, A.-L., Bacalum, F., Sarbu, L., Obtaining of clinoptilolitic extrudates for environmental applications: I. rheological characterization for the zeolitic pastes , Revista de Chimie 60 (10), pp. 1032-1038, 2009

Lucrarea 4:

i) Magyari, E., Thermophoretic deposition of particles in fully developed mixed convection flow in a parallel-plate vertical channel: The full analytical solution, Heat and Mass Transfer, 45 (11), pp. 1473-1482, 2009

ii) Saleh H., Hashim I., Flow Reversal of Fully-Developed Mixed MHD Convection in Vertical Channels, CHINESE PHYSICS LETTERS, 27(2), Article Number: 024401, 2010

### 2. Alte citări ale lucrărilor listate mai sus

Lucrarea 1 (Criteriul I, pct. 5):

i) Boutros, Y.Z., Abd-El-Malek, M.B., Badran, N.A., Hassan, H.S., Lie-group method of solution for steady two-dimensional boundary-layer stagnation-point flow towards a heated stretching sheet placed in a porous medium, Meccanica 41 (6), pp. 681-691, 2006

Lucrarea 2 (Criteriul I, pct. 5):

i) Sajid, M., Javed, T., Hayat, T., MHD rotating flow of a viscous fluid over a shrinking surface, Nonlinear Dynamics 51 (1-2), pp. 259-265, 2008

### 3. Citări în perioada 2005-2009 ale articolelor anterioare anului 2005

1) A. Postelnicu, T. Groşan and I. Pop, Free convection boundary layer over a vertical permeable flat plate in a porous medium with internal heat generation, *Int. Comm. Heat Mass Transfer*, 27, 729-738, 2000. **(IF 0.293)**

i) Cortell R,Flow and heat transfer of a fluid through a porous medium over a stretching surface with internal heat generation/absorption and suction/blowing, FLUID DYNAMICS RESEARCH 37 (4): 231-245, 2005

ii) Ali, M.E., The effect of lateral mass flux on the natural convection boundary layers induced by a heated vertical plate embedded in a saturated porous medium with internal heat generation, *International Journal of Thermal Sciences* 46 (2), pp. 157-163, 2007

iii) Abel, M.S., Siddheshwar, P.G., Nandeppanavar, M.M., Heat transfer in a viscoelastic boundary layer flow over a stretching sheet with viscous dissipation and non-uniform heat source, *International Journal of Heat and Mass Transfer* vol. 50, pp. 960-966, 2007.

iv) Ferdows, M., Kaino, K., Crepeau, J.C., Natural convection of a magnetohydrodynamic flow past a semi-infinite vertical porous plate in a porous medium with internal heat generation, *International Journal of Heat and Technology* vol. 25, pp. 91-94, 2007

v) Dash S., Dash G.C., Mishra D.P., MHD flow through a porous medium past a stretched vertical permeable surface in the presence of heat source/sink and a chemical reaction, *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES INDIA SECTION A-PHYSICAL SCIENCES* vol: 78A, pp: 49-55, 2008
Kiwan, S., Ali, M.E., Near-slit effects on the flow and heat transfer from a stretching plate in a porous medium , Numerical Heat Transfer; Part A: Applications 54 (1), pp. 93-108, 2008

vi) Mealey, L., Merkin, J.H., Free convection boundary layers on a vertical surface in a heat-generating porous medium, IMA Journal of Applied Mathematics (Institute of Mathematics and Its Applications) 73 (1), pp. 231-253, 2008

vii) Awang Kechil, S., Hashim, I., Series solutions of boundary-layer flows in porous media with lateral mass flux , Heat and Mass Transfer/Waerme- und Stoffuebertragung 44 (10), pp. 1179-1186, 2008

viii) Makinde, O.D., Moitsheki, R.J., On nonperturbative techniques for thermal radiation effect on natural convection past a vertical plate embedded in a saturated porous medium, Mathematical Problems in Engineering 2008, art. no. 689074, 2008

ix) Mohamed, R.A., Abbas, I.A., Abo-Dahab, S.M., Finite element analysis of hydromagnetic flow and heat transfer of a heat generation fluid over a surface embedded in a non-Darcian porous medium in the presence of chemical reaction, Communications in Nonlinear Science and Numerical Simulation 14 (4), pp. 1385-1395, 2009

x) Rawat, S., Bhargava, R., Bhargava, R., Bég, O.A., Transient magneto-micropolar free convection heat and mass transfer through a non-Darcy porous medium channel with variable thermal conductivity and heat source effects, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 223 (10), pp. 2341-2355, 2009

2) T. Groşan and I. Pop, Free convection over a vertical flat plate with a variable wall temperature and internal heat generation in a porous medium saturated with a non-Newtonian fluid, *Technische Mechanik*. Vol. 21, pp. 313-318, 2001.

i) Ali, M.E., The effect of lateral mass flux on the natural convection boundary layers induced by a heated vertical plate embedded in a saturated porous medium with internal heat generation, International Journal of Thermal Sciences 46 (2), pp. 157-163, 2007

3) A.C. Baytas, A. Liaqat, T. Groşan and I. Pop, Conjugate natural convection in a square porous cavity, Heat and Mass Transfer, Vol. 37, pp. 467-473, 2001. **(IF 0.613)**

i) Aydin O, Conjugate heat transfer analysis of double pane windows, BUILDING AND ENVIRONMENT 41 (2): 109-116, 2006

ii) Saeid, N.H. Conjugate natural convection in a vertical porous layer sandwiched by finite thickness walls, *International Communications in Heat and Mass Transfer* vol. 34, pp. 210-216, 2007.

iii) Saeid, N.H., Conjugate natural convection in a porous enclosure: effect of conduction in one of the vertical walls, *International Journal of Thermal Sciences* vol. 46, pp. 531-539, 2007

iv) Zhao, F.-Y., Liu, D., Tang, G.-F., Conjugate heat transfer in square enclosures, *Heat and Mass Transfer/Waerme- und Stoffuebertragung* vol. 43, pp. 907-922, 2007

v) Saeid, N.H., Conjugate natural convection in a porous enclosure sandwiched by finite walls under thermal nonequilibrium conditions, *Journal of Porous Media* 11 (3), pp. 259-275, 2008

vi) Mobedi, M, Conjugate natural convection in a square cavity with finite thickness horizontal walls**,** *International Communications in Heat and Mass Transfer* 35 (4), pp. 503-513, 2008

vii) Liu, D., Zhao, F.-Y., Tang, G.-F., Conjugate heat transfer in an enclosure with a centered conducting body imposed sinusoidal temperature profiles on one side**,** *Numerical Heat Transfer; Part A: Applications* 53 (2), pp. 204-223, 2008

viii) Srinivas, S., Muthuraj, R., Effects of thermal radiation and space porosity on MHD mixed convection flow in a vertical channel using homotopy analysis method, *Communications in Nonlinear Science and Numerical Simulation* 15 (8), pp. 2098-2108 , 2010

4) A. Postelnicu, T. Grosan and I. Pop, The effect of variable viscosity on forced convection flow past a horizontal flat plate in a porous medium with internal heat generation. *Mech. Res. Comm.* Vol. 28, pp. 331-337, 2001. **(IF 0.340)**

i) Pantokratoras, A., Natural convection of air and water with variable thermophysical properties about a vertical isothermal flat plate embedded in a Darcy porous medium, *Progress in Computational Fluid Dynamics* 6 (8), pp. 498-510, 2006

ii) Abel, M.S., Siddheshwar, P.G., Nandeppanavar, M.M., Heat transfer in a viscoelastic boundary layer flow over a stretching sheet with viscous dissipation and non-uniform heat source, *International Journal of Heat and Mass Transfer* vol. 50, pp. 960-966, 2007.

iii) Ferdows, M., Kaino, K., Crepeau, J.C., Natural convection of a magnetohydrodynamic flow past a semi-infinite vertical porous plate in a porous medium with internal heat generation, *International Journal of Heat and Technology* vol. 25, pp. 91-94, 2007

iv) Aissa, W.A., Effects of radiation on mass and heat transfer of a fluid through a porous medium over a stretching sheet with suction and internal heat generation or absorption, *International Journal of Fluid Mechanics Research* 35 (3), pp. 203-218 , 2008

v) Aydin, O., Kaya, A., Non-Darcian forced convection flow of viscous dissipating fluid over a flat plate embedded in a porous medium, Transport in Porous Media 73 (2), pp. 173-186, 2008

5) I. Pop, A. Postelnicu and T. Groşan, Thermosolutal Marangoni forced convection boundary layers. *Meccanica*. Vol. 36, pp. 555-571, 2001. **(IF 0.422)**

i) Al-Mudhaf A, Chamkha AJ, Similarity solutions for MHD thermosolutal Marangoni convection over a flat surface in the presence of heat generation or absorption effects, HEAT AND MASS TRANSFER 42 (2): 112-121, 2005

ii) Magyari, E., Chamkha, A.J., Exact analytical solutions for thermosolutal Marangoni convection in the presence of heat and mass generation or consumption**,** *Heat and Mass Transfer/Waerme- und Stoffuebertragung,* vol.43, pp. 965-974, 2007

iii) Magyari, E., Chamkha, A.J., Exact analytical results for the thermosolutal MHD Marangoni boundary layers**,** *International Journal of Thermal Sciences* 47 (7), pp. 848-85, 2008.

6) T. Groşan and I. Pop, Free convection of non-Newtonian fluids over a vertical surface in a porous medium with internal heat generation, *Int. J. Appl. Mech. Engng*., Vol. 7, pp.401-407, 2002.

i) Ali, M.E., The effect of lateral mass flux on the natural convection boundary layers induced by a heated vertical plate embedded in a saturated porous medium with internal heat generation, International Journal of Thermal Sciences 46 (2), pp. 157-163, 2007
ii) Makinde, O.D., Moitsheki, R.J., On nonperturbative techniques for thermal radiation effect on natural convection past a vertical plate embedded in a saturated porous medium, Mathematical Problems in Engineering 2008, art. no. 689074, 2008

7) A.C. Baytas, T. Groşan and I. Pop, Free convection in spherical annular sectors filed with a porous medium, *Transport in Porous Media* Vol. 49, pp.191-207, 2002. **(IF 1.037)**
i) Zhao, F.-Y., Liu, D., Tang, G.-F., Free convection from one thermal and solute source in a confined porous medium**,** *Transport in Porous Media* 70 (3), pp. 407-425,2007

8) R. Nazar, N. Amin, T. Groşan and I. Pop, Free convection boundary layer on an isothermal sphere in a micropolar fluid, *Int. Comm. Heat Mass Transfer*, Vol. 29, pp. 377-386, 2002. **(IF 0.288)**
i) Cheng, C.-Y., Free convection heat and mass transfer from a horizontal cylinder of elliptic cross section in micropolar fluids, *International Communications in Heat and Mass Transfer*, 33 (3), pp. 311-318, 2006
ii) Postelnicu, A., Free convection about a vertical frustum of a cone in a micropolar fluid, *International Journal of Engineering Science*, 44 (10), pp. 672-682, 2006
iii) Molla, Md.M., Hossain, Md.A., Paul, M.C., Natural convection flow from an isothermal horizontal circular cylinder in presence of heat generation, *International Journal of Engineering Science*, 44 (13-14), pp. 949-958, 2006.
iv) Molla, M.M., Hossain, M.A., Effects of chemical reaction, heat and mass diffusion in natural convection flow from an isothermal sphere with temperature dependent viscosity, *Engineering Computations (Swansea, Wales)*, 23 (7), pp. 840-857, 2006
v) Molla, M.M., Hossain, M.A., Taher, M.A., Magnetohydrodynamic natural convection flow on a sphere with uniform heat flux in presence of heat generation, *Acta Mechanica*, 186 (1-4), pp. 75-86, 2006
vi) Cheng, C.-Y., Natural convection heat and mass transfer from a sphere in micropolar fluids with constant wall temperature and concentration, *International Communications in Heat and Mass Transfer*, 35 (6), pp. 750-755, 2008
vii) Cheng, C.-Y., Natural convection of a micropolar fluid from a vertical truncated cone with power-law variation in surface temperature, *International Communications in Heat and Mass Transfer*, 35 (1), pp. 39-46, 2008
viii) Mamun Molla, Md., Paul, S.C., Anwar Hossain, Md., Natural convection flow from a horizontal circular cylinder with uniform heat flux in presence of heat generation *Applied Mathematical Modelling*, 33 (7), pp. 3226-3236, 2009
ix) Bég, O.A., Zueco, J., Bhargava, R., Takhar, H.S., Magnetohydrodynamic convection flow from a sphere to a non-Darcian porous medium with heat generation or absorption effects: network simulation, *International Journal of Thermal Sciences*, 48 (5), pp. 913-921, 2009

9) Nazar R, Amin N, Grosan T, Pop I, Free convection boundary layer on a sphere with constant surface heat flux in a micropolar fluid, *Int. Comm. Heat Mass Transfer*, Vol. 29, pp. 1129-1138, 2002. **(IF 0.288)**
i) Postelnicu, A, Free convection about a vertical frustum of a cone in a micropolar fluid**,** *International Journal of Engineering Science* 44 (10), pp. 672-682, 2006.
ii) Cheng, C.-Y., Natural convection heat and mass transfer from a sphere in micropolar fluids with constant wall temperature and concentration, *International Communications in Heat and Mass Transfer* 35 (6), pp. 750-755, 2008.

10) A.J. Chamkha, T. Groşan and I. Pop, Fully developed free convection of a micropolar fluid in a vertical channel. *Int. Comm. Heat Mass Transfer*, Vol. 29, pp. 1021-1196, 2002. **(IF 0.415)**
i) Kumar L, Bhargava R, Bhargava P, Takhar HS, Finite element solution of mixed convection micropolar fluid flow between two vertical plates with varying temperature, ARCHIVES OF MECHANICS 57 (4): 251-264 , 2005
ii) Cheng, C.-Y., Fully developed natural convection heat and mass transfer of a micropolar fluid in a vertical channel with asymmetric wall temperatures and concentrations, *International Communications in Heat and Mass Transfer* vol. 33, pp. 627-635, 2006.
iii) Barletta, A., Lazzari, S., Magyari, E., Uni- and bidirectional mixed convection flow regimes described by dual solutions in a vertical duct**,** *Acta Mechanica* 194 (1-4), pp. 83-102, 2007
iv) Barletta, A., Parallel and non-parallel laminar mixed convection flow in an inclined tube: The effect of the boundary conditions**,** *International Journal of Heat and Fluid Flow* 29 (1), pp. 83-93,2008
v) Abdulaziz, O., Hashim, I., Fully developed free convection heat and mass transfer of a micropolar fluid between porous vertical plate Numerical Heat Transfer; Part A: Applications 55 (3), pp. 270-288, 2009
vi) Abdulaziz, O., Noor, N.F.M., Hashim, I., Homotopy analysis method for fully developed MHD micropolar fluid flow between vertical porous plates, International Journal for Numerical Methods in Engineering 78 (7), pp. 817-827, 2009
vii) Chakraborty, D., Chakraborty, S., Thermal transport of fluid containing homogeneous microstructures, International Journal of Thermal Sciences 48 (7), pp. 1259-1264, 2009

viii) Sami Bataineh, A., Noorani, M.S.M., Hashim, I., Solution of fully developed free convection of a micropolar fluid in a vertical channel by homotopy analysis method, International Journal for Numerical Methods in Fluids 60 (7), pp. 779-789, 2009

ix) Srinivas, S., Muthuraj, R., Effects of thermal radiation and space porosity on MHD mixed convection flow in a vertical channel using homotopy analysis method, *Communications in Nonlinear Science and Numerical Simulation* 15 (8), pp. 2098-2108 , 2010

11) I. Pop, M. Kumari and T. Groşan, Mixed convection along a vertical cone for fluids of any. Prandtl number: case of constant wall temperature. *Int. J. Numerical Methods for Heat and Fluid Flow*, Vol. 13, pp. 815-829, 2003. **(IF 0.584)**

i) Kumar L, Bhargava R, Bhargava P, Takhar HS, Finite element solution of mixed convection micropolar fluid flow between two vertical plates with varying temperature, ARCHIVES OF MECHANICS 57 (4): 251-264 , 2005

ii) Ashjaee, M., Arzaghi, M., Jarrahi, M., Yousefi, T., Experimental and numerical study of free convection on an isothermal downward cone**,** *Experimental Heat Transfer* 20 (4), pp. 307-322,2007.

iii) Ravindran, R. Roy, S., Momoniat, E.,Effects of injection (suction) on a steady mixed convection boundary layer flow over a vertical cone, International Journal of Numerical Methods for Heat and Fluid Flow , 19(3-4), Pages 432-444, 2009

12) A.J. Chamkha, T. Groşan and I. Pop, Fully developed mixed convection of a micropolar fluid in a vertical channel, *International Journal of Fluid Mechanics Research,* Vol. 30, pp. 251-263, 2003.

i) Zueco, J., Bég, O.A., Takhar, H.S., Network numerical analysis of magneto-micropolar convection through a vertical circular non-Darcian porous medium conduit, Computational Materials Science 46 (4), pp. 1028-1037, 2009

13) T. Groşan, A. Postelnicu and I. Pop, Free convection boundary layer over a vertical cone in a non-Newtonian fluid saturated porous medium with internal heat generation. *Technische Mechanik*, Vol. 24, pp. 91-104, 2004.

i) Al-Azab, T.A. , Free convection heat transfer of a visco-elastic fluid past an infinite vertical porous plate embedded in a non-darcian porous medium, International Journal of Heat and Technology 24 (1), pp. 107-112, 2006

**4. Distincţii, premii şi alte recunoaşteri naţionale şi internaţionale**

**5. Studenţi naţionali atraşi (activităţi de coordonare ştiinţifică şi didactică)**

- Îndrumare lucrari de licentă (număr lucrări susţinute) : 1 (Plop Cristian)
- Îndrumare lucrări de disertaţie (număr lucrări susţinute) : 2 (Rezler Reka, Patrulescu Flavius)
- Doctoranzi (lista nominală a doctoranzilor înmatriculaţi resp. lista nominală a tezelor susţinute)
- Post-doctoranzi (lista nominală)

**6. Studenţi internaţionali atraţi (activităţi de coordonare ştiinţifică şi didactică)**

- Îndrumare lucrari de licenta (număr lucrări susţinute)
- Îndrumare lucrări de disertaţie (număr lucrări susţinute)
- Doctoranzi (lista nominală a doctoranzilor înmatriculaţi resp. lista nominală a tezelor susţinute)
- Post-doctoranzi (lista nominală)

**7. Membru in comitetul de redacţie la reviste ISI**

**8. Membru in comitetul de redacţie la reviste BDI**

**9. Participări la programe/granturi de cercetare finanţate din sursă internaţională (se menţionează şi valoarea)**

Grant **NATO** (directori: Prof. A.C. Baytas, Universitatea Tehnica Istanbul, Turcia, Prof. Ingham, Universitatea din Leeds, UK, Prof. Ioan Pop, Universitatea Babes-Bolyai Cluj-Napoca, Romania) in valoare de **12.000** EU pentru anii 2006-2008.

**10. Participări la programe/granturi finanţate din sursă naţională (se menţionează şi valoarea)**

I. Director grant: Prof.dr. Ioan Pop, Universitatea Babes-Bolyai Cluj-Napoca,Romania:

2005: Cod CNCSIS 324 in valoare de 117.300 mii lei

2006: Cod CNCSIS 324 in valoare de 147.200 mii lei

II. Director grant: Prof.dr. Mirela Kohr， Universitatea Babes-Bolyai Cluj-Napoca,Romania:

1. Grant tip A cod CNCSIS 336 (2004-2006): MODELE MATEMATICE ÎN MECANICA FLUIDELOR VÂSCOASE, TEORIA TRANSFERULUI DE CÃLDURÃ SI MECANICA CEREASCÃ. APLICATII

1.1. Tema 42/2005: Valoare fazã (unicã): 11730 RON
1.2. Tema 33/2006: Valoare fazã (unicã): 14720 RON

2. Grant tip A cod CNCSIS 1470 (2007-2008): PROBLEME MODERNE DE MISCARE SI TRANSFER DE CÃLDURÃ ÎN FLUIDE VÂSCOASE SI MEDII POROASE. APLICATII
2.1. Tema 6/2007: Valoare fazã (unicã): 41400 RON
2.2. Tema 33/2008: Valoare fazã (unicã): 45425 RON

3. Grant UEFISCSU-CNCSIS PN-II-ID cod 525 (2007-2010): STUDIUL UNOR MISCARI FLUIDE VÂSCOASE ÎN MEDII POROASE CU APLICATII ÎN BIOLOGIE SI MEDICINÃ
Valoare/2007: 9595 lei; Valoare/2008: 62051,07 lei; Valoare/2009: 42086,09 lei

**11. Coordonări de programe/granturi finanţate din sursă internaţională (se menţionează şi valoarea)**

**12. Coordonări de programe/granturi finanţate din sursă naţională (se menţionează şi valoarea)**
1. Fenomene de transfer in medii poroase si fluide vascoase cu proprietati fizice variabile (CEEX – ET 90), 2006 – 2008, ANCS, 95.000 RON (http://www.math.ubbcluj.ro/~tgrosan/ceex90.html)

**13. Profesor invitat la universitati de prestigiu, cu titlu oficial**

**14. Membru în comisii profesionale relevante, cu titlu oficial**

**15. Conferinţe invitate internaţionale**

**16. Membru în comitete de organizare sau ştiinţifice ale unor conferinţe internaţionale**

## III. Realizare remarcabilă

(Descrieţi într-o manieră cât mai accesibilă (în maximum 1 pagină) cea mai importantă realizare ştiinţifică/tehnică/artistică din ultimii 5 ani şi impactul acesteia.)

Lucrarea:

**N. Siedow, D. Lochegnies, T. Grosan and E. Romero, Application of a new method for radiative heat transfer to flat glass tempering, *Am. Cer. Soc*., Vol. 88, pp. 2181-2187, 2005. (IF 1.586)**

Distributia temperaturii in materialele semitransparente (de exemplu sticla) determina comportamentul vasco-elastic al acestora, variatii mici in gradientul de temperatura ducand la modificari dramatice in tensiuni. In procesele de calire (securizare) ale sticlei este necesar sa luam in considerare transferul de caldura datorat radiatiei. O metoda rapida, foarte cunoscuta, de aproximare a transferului radiativ de caldura este aproximatia lui Rosseland, dar aceasta aproximatie este valida doar in mediile cu grosime optica ridicata. O alta metoda cu rezultate bune si pentru mediile cu grosime optica mica este Discrete Ordinate Method, dar resursele hard necesare si timpul de calcul o fac aproape inaplicabila in probleme concrete. In acesta lucrare este introdusa o noua metoda care imbina rapiditatea primei metode si acuratetea celei de-a doua. Metoda este aplicata in studiul concret al calirii suprafetelor plane de sticla, calculandu-se efectul temperaturii asupra tensiunilor ce iau nastere in material datorita diferentelor de temperatura in jurul temperaturii de topire.
In urma experimentelor numerice se constata ca noua metoda este duce la o estimare a tensiunii cu o diferenta de 0.8% fata de solutia exacta. Daca transferul radiativ de caldura este ignorat in timpul calirii, erorile cresc la 2.4%, iar in cazul metodei Rosseland, care este cea mai utilizata metoda in industrie, se obtine ce-a mai mare eroare, aproximativ 7.3%. Datorita timpului de calcul scazut noua metoda este o solutie pentru calcularea tensiunilor reziduale la un nivel ridicat de acuratete in timpul tratamentului de calire. Optimizarea procesului de calire se bazeaza pe controlul si limitarea tensiunilor de origine termica ce pot cauza spargerea sticlei in timpul acestui proces.

Data: Semnătura:

**Certific validitatea datelor prezentate**

Sef de catedră,