

# Scientific activity report

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### 1. RESULTS OBTAINED IN RESEARCH ACTIVITY (ARTICLES PUBLISHED IN WoS QUOTED JOURNAL, WoS PROCEEDINGS, OTHER DATABASES, BOOKS, PATENTS)

#### 1.1. Articles published in WoS quoted journal: 76

Over the years I published 76 papers indexed in WoS database in journals with high impact factor, as:

• Renewable and Sustainable Energy Reviews	FI 2019: 12.11
• Applied Energy	FI 2019: 8.848
• Solar Energy Materials and Solar Cells	FI 2019: 6.984
• Renewable energy	FI 2019: 6.274
• Journal of Molecular Liquids	FI 2019: 5.065
• International Journal of Heat And Mass Transfer	FI 2019: 4.974
• Nanomaterials	FI 2019: 4.324
• International Communications in Heat and Mass Transfer	FI 2019: 3.971
• Chemical Engineering Science	FI 2019: 3.871
• Thermochimica Acta	FI 2019: 2.762
• Journal of Thermal Analysis and Calorimetry	FI 2019: 2.731
• Experimental Heat Transfer	FI 2019: 2.543
• Microfluidics and Nanofluidics	FI 2019: 2.489
• Applied Sciences	FI 2019: 2.474
• Flow, turbulence and combustion	FI 2019: 2.472
• Mechanics Research Communications	FI 2019: 2.282
• Continuum Mech. Thermodyn	FI 2019: 2.139
• Heat and Mass Transfer	FI 2019: 1.867
• Current Nanosciences	FI 2019: 1.836
• Energy Sources Part B: Economics, Planning, and Policy	FI 2019: 1.758
• Heat Transfer Engineering	FI 2019: 1.693
• Thermal Science Journal	FI 2019: 1.574

having an overall impact factor of 197.76.

#### *WoS published papers are:*

1. **A.A. Minea**, Overview of ionic liquids as candidates for new heat transfer fluids, International Journal of Thermophysics, (2020), DOI: 10.1007/s10765-020-02727-3
2. E.I. Cherecheș, J.I. Prado, C. Ibanescu, M. Danu, **A.A. Minea**, L. Lugo, Viscosity and isobaric heat capacity of alumina Nanoparticle Enhanced Ionic Liquids: an experimental approach, Journal of Molecular Liquids, (2020), <https://doi.org/10.1016/j.molliq.2020.114020>.
3. E.I. Chereches, M. Chereches, A. Alexandru, A. Dima, **A.A. Minea**, Nanoparticles in ionic liquids: numerical evaluation of heat transfer behaviour in laminar flow, Heat Transfer Engineering, (2020), acceptată pentru publicare.
4. P. Kanti, K. V. Sharma, C. G. Ramachandra, **A. A. Minea**, Effect of ball milling on the thermal conductivity and viscosity of Indian coal fly ash nanofluid, Heat Transfer, DOI: 10.1002/htj.21836, 2020.
5. E.I. Chereches, **A.A. Minea**, Experimental evaluation of electrical conductivity of ionanofluids based on water - [C2mim][CH3SO3] ionic liquids mixtures and alumina nanoparticles, Journal of Thermal Analysis and Calorimetry, (2020), DOI: 10.1007/s10973-020-09925-z.
6. T. M. Simionescu, I. Spiridon, C.D. Varganici, R.N. Darie-Nita, **A. A. Minea**, An experimental study on mechanical and thermal behavior of acrylonitrile butadiene styrene enhanced with fire retardants, Environmental Engineering and Management Journal, 19 (2020) 773-783
7. E I Chereches, **A A Minea**, K.V. Sharma, A complex evaluation of [C 2 mim][CH 3 SO 3 ]–alumina nanoparticle enhanced ionic liquids internal laminar flow, International Journal of Heat and Mass Transfer, 154 (2020) 119674.

8. **AA Minea**, Pumping power and heat transfer efficiency evaluation on Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and SiO<sub>2</sub> single and hybrid water-based nanofluids for energy application, *Journal of Thermal Analysis and Calorimetry*, 2020 139(2), pp. 1171-1181.
9. T. M. Simionescu, **A. A. Minea**, The effect of montmorillonite clay and fire retardants on the heat of combustion of recycled acrylonitrile-butadiene styrene, *Environmental Engineering and Management Journal*, 2019, 18(11) 2387-2396.
10. T.M. Simionescu, **A.A. Minea**, Paulo N.B. Reis, Fire properties of acrylonitrile butadiene styrene enhanced with organic montmorillonite and exolit fire retardant, *Appl. Sci.* 2019, 9(24), 5433
11. **A A Minea**, A Review on Electrical Conductivity of Nanoparticle-Enhanced Fluids, *Nanomaterials* 2019, 9(11), 1592
12. E I Chereches, **A A Minea**, Electrical conductivity of new nanoparticle enhanced fluids: an experimental study, *Nanomaterials* 9 (2019) 1228.
13. **A. Minea**, B. Buonomo, J. Burggraf, D. Ercole, K. R. Karpaiya, A. Di Pasqua, G. Sekrani, J. Steffens, J. Tibaut, N. Wichmann, P. Farber, A. Humnic, G. Humnic, R. Mahu, O. Manca, C. Oprea, S. Poncet, J. Ravnik, , NanoRound: A benchmark study on the numerical approach in nanofluids' simulation, *International Communications in Heat and Mass Transfer*, 108 (2019) 104292
14. EI Cherecheș, JI Prado, M Cherecheș, **AA Minea**, L. Lugo, Experimental study on thermophysical properties of alumina nanoparticle enhanced ionic liquids, *Journal of Molecular Liquids* 291 (2019) 111332
15. Moldoveanu, G.M., **Minea, A.A.**, Specific heat experimental tests of simple and hybrid oxide-water nanofluids: Proposing new correlation, *Journal of Molecular Liquids* 279 (2019) 299-305
16. Moldoveanu, G.M., **Minea, A.A.**, Humnic, G., Humnic, A., Al<sub>2</sub>O<sub>3</sub>/TiO<sub>2</sub> hybrid nanofluids thermal conductivity: an experimental approach, *Journal of Thermal Analysis and Calorimetry*, 137 (2) (2019) 583-592
17. W. M. El-Maghlany, **A. A. Minea**, Novel empirical correlation for ionanofluid PEC inside tube subjected to heat flux with application to solar energy, *Journal of Thermal Analysis and Calorimetry*, 135 (2019) 1161–1170
18. **A. A. Minea**, M. G. Moldoveanu, Overview of Hybrid Nanofluids Development and Benefits, *Journal of Engineering Thermophysics*, 27 (2018) 27 507–514
19. **A. A. Minea**, P. Estelle, Numerical study on CNT nanofluids behavior in laminar pipe flow, *Journal of Molecular Liquids*, 271 (2018) 281-289
20. Moldoveanu, G.M., Humnic, G., **Minea, A.A.**, Humnic, A., Experimental study on thermal conductivity of stabilized Al<sub>2</sub> O<sub>3</sub> and SiO<sub>2</sub> nanofluids and their hybrid, *International Journal of Heat and Mass Transfer*, 127 (2018) 450-457
21. **Minea, A.A.**, Murshed, S.M.S., A review on development of ionic liquid based nanofluids and their heat transfer behavior, *Renewable and Sustainable Energy Reviews*, 91 (2018) 584-599
22. E. I. Chereches, K. V. Sharma, **A. A. Minea**, A numerical approach in describing ionanofluids behavior in laminar and turbulent flow, *Continuum Mech. Thermodyn.*, 30 (2018) 657–666
23. G.M. Moldoveanu, C Ibanescu, M. Danu, **A.A. Minea**, Viscosity estimation of Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub> nanofluids and their hybrid: An experimental study, *Journal of Molecular Liquids*, 253 (2018) 188-196
24. **A. A. Minea**, W. M. El-Maghlany, Influence of hybrid nanofluids on the performance of parabolic trough collectors in solar thermal systems: recent findings and numerical comparison, *Renewable energy*, 120 (2018) 350-364.
25. GM Moldoveanu, **AA Minea**, M Iacob, C Ibanescu, M Danu, Experimental study on viscosity of stabilized Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> nanofluids and their hybrid, *Thermochimica Acta*, 659 (2018) 203–212
26. S. Akilu , A. T. Baheta , M. A. M.Said , **A.A. Minea** , K.V. Sharma, Properties of glycerol and ethylene glycol mixture based SiO<sub>2</sub>-CuO/C hybrid nanofluid for enhanced solar energy transport, *Solar Energy Materials and Solar Cells*, 179 (2018) 118-128
27. S. Akilu, A. T. Baheta, **A. A. Minea**, K.V. Sharma, Rheology and thermal conductivity of non-porous silica (SiO<sub>2</sub>) in viscous glycerol and ethylene glycol based nanofluids, *International Communications in Heat And Mass Transfer*, 88 (2017) 245-253
28. **A. A. Minea**, W. M. El-Maghlany, Natural convection heat transfer utilizing ionic nanofluids with temperature-dependent thermophysical properties, *Chemical Engineering Science* 174 (2017) 13–24
29. **A.A. Minea**, G. Lorenzini, A numerical study on ZnO based nanofluids behavior on natural convection, *International Journal Of Heat And Mass Transfer* 114 (2017) 286-296 2017
30. **A.A. Minea**, M.G. Moldoveanu, STUDIES ON Al<sub>2</sub>O<sub>3</sub>, CuO AND TiO<sub>2</sub> WATER BASED NANOFLUIDS: A COMPARATIVE APPROACH IN LAMINAR AND TURBULENT FLOW, *Journal of engineering thermophysics*, 26 (2017), 291-301.
31. **A.A. Minea**, Challenges in hybrid nanofluids behavior in turbulent flow: Recent research and numerical comparison, *Renewable and Sustainable Energy Reviews*, 71 (2017) 426–434
32. **AA Minea**, O Manca, Field-synergy and Figure of Merit Analysis of Two Oxide Water Based Nanofluid Flow in Heated Tubes, *Heat Transfer Engineering*, 38, (2017) 909-918.

33. **A. A. Minea**, Hybrid nanofluids based on Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and SiO<sub>2</sub>: numerical evaluation of different approaches, *International Journal Of Heat And Mass Transfer*, 104 (2017) 852–860, 2017
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42. V. Bianco, O. Manca, **A. A. Minea**, S. Nardini, An analysis of the electricity sector in Romania, *Energy Sources Part B: Economics, Planning, and Policy*, DOI:10.1080/15567241003792366, vol. 9, pp. 149 – 155, 2014.
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45. **A.A. Minea**, O. Manca, Experimental studies on radiation heat transfer enhancement on a standard muffle furnace, *Thermal Science*, 17 (2), pp. 591-598, 2013
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47. **A.A. Minea**, R. Luciu, Investigations on electrical conductivity of stabilized water - Al<sub>2</sub>O<sub>3</sub> nanofluids, *Microfluidics and Nanofluidics*, 13(6), pp. 977-985, 2012
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51. O. Manca, **A. A. Minea**, S. Nardini, S. Tamburrino, Numerical investigation on convective heat transfer in high temperature solar receiver, *Environmental Engineering and Management Journal* vol. 10 (2011), nr. 10, ISSN: 1582-9596, pp. 1467-1475
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53. D Iacob, **A. A. Minea**, P. N. B. Reis, High strength steels for safety applications in automotive industry, *Metalurgia International* vol XVI, no.6, ISSN 1582-2214, pp. 5-9, 2011:
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55. V. Bianco, O. Manca, S. Nardini, **A. A. Minea**, Analysis and forecasting of nonresidential electricity consumption in Romania, *Applied Energy*, Elsevier, DOI:10.1016/j.apenergy.2010.05.018, ISSN 0306-2619, 2010
56. **A A Minea**, Simulation of Heat Transfer Processes in an Unconventional Furnace, *Journal of Engineering Thermophysics*, Vol. 19, No. 4, Pleiades Publishing, ISSN 1810-2328, DOI: 10.1134/S1810232810010017, pp. 31-38, 2010
57. **A A Minea**, An Experimental Method to Decrease Heating Time in a Commercial Experimental Heat Transfer, *Taylor and Francis*, Vol. 23, No 3, pp. 175 — 184, <http://dx.doi.org/10.1080/08916150903399714>, ISSN 0891-6152, 2010
58. **A. A. Minea**, A study on energy consumption in Romania, *Environmental Engineering and Management Journal*, “Gh. Asachi” Technical University of Iasi, ISSN: 1582-9596, vol. 9, nr. 4, p. 581-587, 2010

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61. **A A Minea**, Simulation of Heat Transfer Processes in an Unconventional Furnace, *Journal of Engineering Thermophysics*, Vol. 19, No. 1, Pleiades Publishing, ISSN 1810-2328, DOI: 10.1134/S1810232810010017, pp. 31-38, 2010
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68. A. Dima, **A.A. Minea**, *Reducing oxide layer on AlCu<sub>2</sub>Mg treated parts through improving heat transfer*, *REVISTA METALURGIA INTERNATIONAL* vol. XIII(10): pag. 5-8, ISSN 1582-2214, 2008
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### 1.2. Articles published in WoS proceedings: 3

1. Achitei, DC; Vizureanu, P; **Minea, AA**, Al Bakri Abdullah, MM; Minciuna, MG; Sandu, AV, Improvement of Properties of Aluminum Bronze CuAl<sub>7</sub>Mn<sub>3</sub> by Heat Treatments, *ENGINEERING SOLUTIONS AND TECHNOLOGIES IN MANUFACTURING*, Applied Mechanics and Materials 657 (2014) 412
2. Minea, AA; Luciu, RS; Manca, O, Influence Of Microtube Heating Geometry On Behavior Of An Alumina Nanofluid At Low Reynolds Numbers, *INNOVATIVE MANUFACTURING ENGINEERING*, Applied Mechanics and Materials, 371 (2013) 596
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### 1.3. Articles published in other databases (Scopus, Scholar): 72

1. E I Chereches, M. Chereches, **A A Minea**, J I Prado, L Lugo, A numerical approach in the assessment of a new class of fluids performance in laminar flow, *IOP Conf. Ser.: Mater. Sci. Eng.* 591 (2019) 012044

2. E.I. Cherecheș, M.I. Cherecheș, **A. A. Minea**, A study on specific heat of nanoparticle enhanced fluids, The 8th CONFERENCE ON MATERIAL SCIENCE &ENGINEERING, UGALMAT, OCTOBER 11-13, IOP Conf. Series: Materials Science and Engineering 485 (2019) 012006
3. **A.A. Minea**, M. G. Moldoveanu, O. Dodun, Thermal Conductivity Enhancement by Adding Nanoparticles to Ionic Liquids, *Precision Machining IX*, Solid State Phenomena (Volume 261),Pages: 121-126, 2017
4. M.G. Moldoveanu, T.M. Simionescu, **A.A. Minea** and A. Dima, Analytical Technique for Estimating the Thermophysical Properties of Hybrid Nanofluids, *Advanced Materials Research*, ISSN: 1662-8985, doi:10.4028/www.scientific.net/AMR.1143.207 Vol. 1143, 207-214, 2017
5. M.G. Moldoveanu, **A.A. Minea**, Studies on few water based nanofluids behavior at heating, *Advanced Materials Research*, Vol. 1128, pp 384-389, 2015
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11. B Buonomo, D Ercole, O Manca, **AA Minea**, A numerical investigation on laminar forced convection with nanofluid in heated flat tubes, 26th International Symposium on Transport Phenomena (ISTP-26), 1-8, 2015
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13. G. Di Lorenzo, O. Manca, **A. A. Minea**, D. Ricci, Laminar Confined Impinging Slot Jets with Nanofluids on Isothermal Surfaces, *International Review of Mechanical Engineering* , IREME, Praise Worthy Publishing, vol. 6, no. 2, ISSN 1970 – 8734, pp.173-180, 2012
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2. **A. A. Minea**, Hybrid nanofluids potential use on parabolic trough collectors, Handbook on Industrial Applications of Nanofluids in Energy Sector, Editors: Matthias H. Buschmann, Leonor Hernández López, Lucía Buj, Publisher: Bubok Publishing S.L, 2020
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## 1.5. Patents

1. **A.A. Minea**, I.G. Sandu, *Procedeu de eficientizare a proceselor de transfer de caldura in cuptoarele electrice clasice pentru tratamentul termic la temperaturi medii*, B.I. no. 122743/30.12.2009, 2006

## 2. RESULTS OBTAINED AS PHD ADVISER AND IN THE MANAGEMENT OF DIDACTIC AND RESEARCH ACTIVITIES

### 2.1. Finalized PhD thesis

I obtained the permission to lead PhD students, as PhD advisor in October 2014 (after sustaining the habilitation), and I started with 2 PhD students at that time.

In 2019 (May) the first PhD student defended its thesis and in 2020 the second one (with „excellent” mark).

At this time, 2 out of my 7 PhD students managed to finish their thesis.

### 2.2. Activities performed in the Doctoral School or in projects sustaining their activities

I am involved in the Doctoral School until 2014 and I was involved in its management as:

**05/2016–02/2018** Director SD\_SIM, Technical University "Gh. Asachi" from Iasi

**02/2018–present** Director CCPD SIM, Technical University "Gh. Asachi" from Iasi, area Materials Engineering

In the last 6 years I participated in different Committees, as:

**Member PhD defense Committee: 14 in România and 7 committees abroad (France, Canada, Italy, India):**

- President of PhD Defense committee TUIASI: 13 participations (11 as president and 2 as member)
- member PhD committee: București 2007
- member PhD committee in India, December 2017.
- member PhD committee in France, Lyon, January 2018.
- member PhD committee in Montreal, University of Sherbrooke, Canada, 25 October 2018.
- member PhD committee in Italia, Nov. 2018.
- member PhD committee in India, March 2019.
- member PhD committee in India, September 2019.
- member PhD committee in France, Rennes, October 2020.

**Member guiding commission:** 4 PhD students

**Member in different commissions for projects in Doctoral School:** since 2010: over 20 participation

**President of Admission Committee for Doctoral Students:** 2016 – 2020 (5 years)

**Activities of sustaining Doctoral School of TUIASI:**

- **promoting activities** in 2019 and 2020 by participating at different career fairs
- **promoting activities** – organizing and updating the CCPD\_SIM website.
- **creating the evaluation summary of CCPD-SIM for 2014-2019**
- **activities for sustaining PhD students:** participating at different fairs for promoting abroad research through Erasmus programme (2018, 2019, 2020), concretized through PhD students access at European research labs (6 PhD students)
- **activities of PhD students training:** seminars and summer schools organized in the Faculty SIM, (4 summer schools and 2 seminars): <https://sim.tuiasi.ro/seminarii-si-evenimente-stiintifice-c-c-p-d-sim/>.
- **activities of PhD students training:** 8 PhD students trained in the project “Perfecționarea continuă a personalului didactic din universitate – garanție a respectării deontologiei profesionale și a eticii academice (PERF-DEONTETIC)” cod CNFIS-FDI-2017-0065

### 2.3. Activities designated attracting new PhD / postdoc students

- **promoting activities** in 2019 and 2020 by participating at different career fairs
- **activities for sustaining PhD students:** participating at different fairs for promoting abroad research through Erasmus programme (2018, 2019, 2020), concretized through PhD students access at European research labs (6 PhD students)
- **activities of PhD students training:** seminars and summer schools organized in the Faculty SIM, (4 summer schools and 2 seminars): <https://sim.tuiasi.ro/seminarii-si-evenimente-stiintifice-c-c-p-d-sim/>.

### 2.4. Organizing scientific events

**Organization of national events:**

2019: The TUIASI Doctoral School International Conference May, 2019, Iasi, Romania

2020: The TUIASI Doctoral School International Conference November 5th-7th, 2020, Iasi, Romania

**Organization of international events:**

2010: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO: <http://www12.tuiasi.ro/facultati/sim/index.php?page=413>

2012: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO, 2-nd edition: <http://www12.tuiasi.ro/facultati/sim/index.php?page=413>

2014: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO, 3-rd edition: <http://www12.tuiasi.ro/facultati/sim/index.php?page=413>

2016: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO, 4-th edition: <http://www12.tuiasi.ro/facultati/sim/index.php?page=413>

***Co-organizer of scientific events COST Nanouptake, as Dissemination Manager:***

- The European Symposium on Nanofluids (ESNf), 2017 – Lisbon, Portugal
- 1st International Conference on Nanofluids (ICNf) and the 2nd European Symposium on Nanofluids (ESNf), 2019, Castellon, Spain

### 3. RECOGNITION IN THE ACADEMIC COMMUNITY

#### 3.1. Invited professor

Over the years I was invited to keep lectures at different universities from Europe, lectures addressed mostly to PhD students. Grants were gained through cooperation agreements under Erasmus, as:

- Seconda Università degli Studi di Napoli in 2009
- Seconda Università degli Studi di Napoli in 2010
- Seconda Università degli Studi di Napoli in 2013
- in Austria, Leoben University, in 2011
- in Portugal, University of Beira Interior, in 2012
- in France, University of Poitiers, in 2013
- in Portugal, University of Beira Interior, in 2014
- in Bulgaria, University UCTM, in 2014
- la Seconda Università degli Studi di Napoli in may 2015
- la Technical University of Athens, Greece in december 2015
- in Bulgaria, University UCTM, in 2016
- in Norway, NTNU Trondheim in 2019

#### 3.2. Key note speaker

Starting 2019 I was invited as *Key Note Speaker at 15 conferences and international events (Training School type)*:

1. Invited speaker for HTE Conference, Moscow, 2009:  
<http://www.wseas.org/conferences/2009/russia/hte/Plenary3.htm>
2. Invited speaker for TEHNOMUS 2013, Suceava, Romania: [http://www.fim.usv.ro/conf\\_1/TEHNOMUS/](http://www.fim.usv.ro/conf_1/TEHNOMUS/)
3. Invited speaker for Conference IManE 2014, 27-30 May 2014, Chisinau, Moldavia:  
<http://www.imane.ro/conference-program/>
4. Invited trainer Summer school in Composite Materials in Portugal in: 2012, 2013, 2014.
5. Invited speaker Conference ISTP 26, Austria, 27.09 – 1.10 2015: <http://www.istp26.at/en/1/>
6. Invited speaker INTERNATIONAL CONFERENCE ON MATERIAL SCIENCE & ENGINEERING, UgalMat 2016, MAY 19 - 21, 2016, GALATI, ROMANIA: <http://www.ugalmat.ugal.ro/>
7. Invited speaker Conference ICMM 2016, Bulgaria, 26.09 2016:  
<http://icmm2016.com/organizers/conference-committee/>
8. Key speaker for TUIasi, First conference of Doctoral Schools, 29-30 mai 2017, Iasi, Romania
9. Invited speaker First International Conference on Energy Systems Engineering, (ICESE'17) 2017, Turcia, november 2017, <http://icese17.com/22-2/>
10. Invited speaker at NANOSTRUC 2018, Berlin, may 2018: <https://www.nanostruc.info/nanostruc-conference.html>
11. Invited speaker at Modtech 2018, Constanta, Romania, iunie 2018:  
[http://modtech.ro/conference/invited\\_speakers.php](http://modtech.ro/conference/invited_speakers.php)
12. Invited Trainer COST Training School in nanofluids, Rzeszow, Polonia, 2018.
13. Invited speaker at IAPE 2019: Innovative Applied Energy, Oxford, UK, martie 2019; <http://iape-conference.org/index.php/2018-05-02-19-15-06/keynote-talks>

#### 3.3. Citations in WoS database (except auto citations)

**79 papers WoS indexed, h-index 15 and 772 citations (659 citations without self-citations) Source: Web of Science**

**97 papers indexed, h-index 16 and 909 citations (778 citations without self-citations) Source: SCOPUS h-index 18, i-10 index 31 and 1176 citations Source: GOOGLE SCHOLAR**

<http://orcid.org/0000-0002-2473-184X>

ResearcherID: C-7307-2009

Scopus Author ID: 23493089800

PUBLONS: <https://publons.com/researcher/444769/alina-adriana-minea>

#### 3.4. Member in different national Committees (CNATDCU, CNCS ș.a.).

- Member Advisory Board TEST ([www.thermofluids.net](http://www.thermofluids.net)), web based courseware

- member commission report “Energy Transition and the Future of Energy Research, Innovation and Education: An Action Agenda for Europe’s Universities”, december 2017
- Member of ARACIS: <http://pfe.aracis.ro/inscriere/registru/evaluator/233/>
- Member CNATDCU Ingineria Materialelor 2016-2020

### 3.5. Other forms of recognition in academic community

**Starting 2009 I initiated and led TUIASI in several agreements between universities, agreements that include both didactical and research activities.** So, it can highlight:

- agreements type Erasmus with universities from Italy, Spain, Portugal, France, Bulgaria, Austria, Norway, Greece;
- research agreements between TUIASI and universities from Italy (Parma and Campagna), Russia (TSTU and St. Petersburg).

**Capacity of cooperation at international level** is proved by financed grants as well as different grant proposals (Horizon 2020, EEA grants etc), invitation in Editorial Board, Key speaker, as well as scientific cooperation in developing joint research published with recognized experts from: University of Lisbon - Portugal, University of Campagna - Italy, University of Rennes - France, Hiderabad University – India, University of Sherbrook – Canada, University of Coimbra – Portugal etc. Some examples are:

1. P. Kanti, **K. V. Sharma**, C. G. Ramachandra, **A. A. Minea**, Effect of ball milling on the thermal conductivity and viscosity of Indian coal fly ash nanofluid, *Heat Transfer*, DOI: 10.1002/htj.21836, 2020.
2. E I Chereches, **A A Minea, K.V. Sharma**, A complex evaluation of [C 2 mim][CH 3 SO 3 ]-alumina nanoparticle enhanced ionic liquids internal laminar flow, *International Journal of Heat and Mass Transfer*, 154 (2020) 119674.
3. T.M. Simionescu, **A.A. Minea, Paulo N.B. Reis**, Fire properties of acrylonitrile butadiene styrene enhanced with organic montmorillonite and exolit fire retardant, *Appl. Sci.* 2019, 9(24), 5433
4. **A. Minea, B. Buonomo, J. Burgraf, D. Ercole, K. R. Karpaia, A. Di Pasqua, G. Sekrani, J. Steffens, J. Tibaut, N. Wichmann, P. Farber, A. Huminic, G. Huminic, R. Mahu, O. Manca, C. Oprea, S. Poncet, J. Ravnik**, , NanoRound: A benchmark study on the numerical approach in nanofluids' simulation, *International Communications in Heat and Mass Transfer*, 108 (2019) 104292
5. E I Cherecheș, **J I Prado**, M Cherecheș, **AA Minea, L. Lugo**, Experimental study on thermophysical properties of alumina nanoparticle enhanced ionic liquids, *Journal of Molecular Liquids* 291 (2019) 111332
6. **W. M. El-Maghlany, A. A. Minea**, Novel empirical correlation for ionanofluid PEC inside tube subjected to heat flux with application to solar energy, *Journal of Thermal Analysis and Calorimetry*, 135 (2019) 1161–1170
7. **A. A. Minea, P. Estelle**, Numerical study on CNT nanofluids behavior in laminar pipe flow, *Journal of Molecular Liquids*, 271 (2018) 281-289
8. **Minea, A.A., Murshed, S.M.S.**, A review on development of ionic liquid based nanofluids and their heat transfer behavior, *Renewable and Sustainable Energy Reviews*, 91 (2018) 584-599
9. E. I. Chereches, **K. V. Sharma, A. A. Minea**, A numerical approach in describing ionanofluids behavior in laminar and turbulent flow, *Continuum Mech. Thermodyn.*, 30 (2018) 657–666
10. **A. A. Minea, W. M. El-Maghlany**, Influence of hybrid nanofluids on the performance of parabolic trough collectors in solar thermal systems: recent findings and numerical comparison, *Renewable energy*, 120 (2018) 350-364.
11. S. Akilu , A. T. Baheta , M. A. M.Said , **A.A. Minea , K.V. Sharma**, Properties of glycerol and ethylene glycol mixture based SiO<sub>2</sub>-CuO/C hybrid nanofluid for enhanced solar energy transport, *Solar Energy Materials and Solar Cells*, 179 (2018) 118-128
12. S. Akilu, A. T. Baheta, **A. A. Minea, K.V. Sharma**, Rheology and thermal conductivity of non-porous silica (SiO<sub>2</sub>) in viscous glycerol and ethylene glycol based nanofluids, *International Communications in Heat And Mass Transfer*, 88 (2017) 245-253
13. **A. A. Minea, W. M. El-Maghlany**, Natural convection heat transfer utilizing ionic nanofluids with temperature-dependent thermophysical properties, *Chemical Engineering Science* 174 (2017) 13–24
14. **A.A. Minea, G. Lorenzini**, A numerical study on ZnO based nanofluids behavior on natural convection, *International Journal Of Heat And Mass Transfer* 114 (2017) 286-296 2017
15. **AA Minea, O Manca**, Field-synergy and Figure of Merit Analysis of Two Oxide Water Based Nanofluid Flow in Heated Tubes, *Heat Transfer Engineering*, 38, (2017) 909-918.
16. **A. M. Amaro, F. V. Antunes, M. A. Neto, P. N. B. Reis, A. A. Minea**, Resonant techniques as non-destructive techniques (ndt) applied to composite materials: case study on low velocity impacts detection, *Environmental Engineering and Management Journal*, 14 (5): 1045-1052, 2015
17. **V. Bianco, O. Manca, A. A. Minea**, S. Nardini, An analysis of the electricity sector in Romania, *Energy Sources Part B: Economics, Planning, and Policy*, DOI:10.1080/15567241003792366, vol. 9, pp. 149 – 155, 2014.

**Coordination of unique international projects**, in nanofluids area: one Benchmark paper (Nanoround – published in 2019 in International Communications in Heat and Mass transfer) and the first book in heat transfer fluids: Advances in New Heat Transfer Fluids (published at Taylor and Francis in 2017).

**Prizes** (summary): 52 national prizes, 10 international prizes and 2 prizes at TUIASI for the best researcher (in 2016 and 2019)

- BEST REVIEWER for 2012, Journal Applied Energy, ELSEVIER
- BEST REVIEWER for 2016, Journal Applied Energy, ELSEVIER
- 2017: Premiul “Traian Negrescu” al ASTR for the book: “Tratat de Stiinta si Ingineria Materialelor”
- UEFISCDI Romania prizes on published papers: 42 prizes during 2015-2019

**Associate Editor** for WoS indexed journals, Elsevier / Springer:

- Associate Editor, **Journal of Thermal Science (Springer) (WoS, IF 1.228)**
- Associate Editor **International Journal of Thermophysics (SPRINGER), (WoS, IF 0.853)**, - Guest Editor in Chief Special Issue "Future and Prospects in Nanofluids Research" in **Nanomaterials journal**, MDPI, (WoS, IF 4.034)
- Guest Editor in Chief Special Issue on nanoparticle enhanced ionic liquids. **International Journal of Thermophysics (SPRINGER)**, (WoS, IF 0.853)

**Member in Editorial Boards for journals** Web of Science / SCOPUS:

- Member in Editorial Board ANNALS OF “DUNAREA DE JOS” UNIVERSITY OF GALATI, Fascicle XII, WELDING EQUIPMENT AND TECHNOLOGY:(SCOPUS)
- Member in Regional Editorial Board Journal of Thermal Sciences (WoS, IF 1.541):
- **Guest Editor in chief** IREME – Special Issue on Heat Transfer 2010, 2011, 2012 and 2013:
- Member in Editorial Board Thermal Science and Engineering Progress (Elsevier) (SCOPUS)
- Member Reviewer Board Micromachines, MDPI, (WoS, IF 2.426):
- **Topic Editor** Nanomaterials journal, MDPI, (WoS, IF 4.324):

**Member in Editorial Boards at journals (indexed in Scholar):**

- Editor in chief IREHeat: <http://www.praiseworthyprize.com/ireheat.htm>
- Editor-in-chief International Journal of Metallurgical Engineering from 2012: <http://www.sapub.org/journal/editorialboard.aspx?JournalID=1063>
- Membru in Editorial Board International Journal of Advanced Thermofluid Research (IJATR): [http://ijatr.org/index.php?option=com\\_content&view=article&id=19&Itemid=63](http://ijatr.org/index.php?option=com_content&view=article&id=19&Itemid=63)
- Membru in Editorial Board International Journal of Energy and Environment from 2012: <http://www.naun.org/wseas/cms.action?id=3043>
- International Journal of Nanoparticles and Nanotechnology: <https://www.vibgyorpublishers.org/journals/reviewer-board.php?jid=ijnn>
- Membru Editorial Board Insight Physics: <http://insight.piscomed.com/index.php/IP/about/editorialTeam>

**Chairman at international events:**

- chairmen session U.2.4. HEAT AND MASS TRANSFER, Conference ASME-ATI-UIT: Thermal and Environmental Issues in Energy Systems 2010, may 2010, Sorrento, Italy
- chairman session G: Mechanical Equipment Design and Analysis, Conference IManE 2013, 22-24 May 2013, Iasi, Romania
- chairman session G: Mechanical Equipment Design and Analysis, Conference IManE 2014, 29-30 May 2014, Chisinau, Rep. Moldova:
- chairmen session M1.3. Single phase heat transfer, Conference ASME-ATI-UIT: Thermal Energy Systems: Production, Storage, Utilization and the Environment 2015, may 2015, Naples, Italy:
- chairmen session M1.4. Heat exchangers, Conference ASME-ATI-UIT: Thermal Energy Systems: Production, Storage, Utilization and the Environment 2015, may 2015, Naples, Italy:
- chairman session A2: Heat exchanger, Conference ISTP26, september 2015, Leoben, Austria:
- chairman session A3: Heat transport technology, Conference ISTP26, september 2015, Leoben, Austria:
- chairman session C6: Micro and nano scale transport, Conference ISTP26, september 2015, Leoben, Austria:
- chairman Session E: Physical & Mechanical Metallurgy. Materials, Conference ICMM 2016, Sofia, Bulgaria
- chairman Conference of PHD School, Technical University “Gh. Asachi” Iasi 2017
- chairman Session 1 (Renewable energy) IAPE 2019:
- chairman Session 2 (Green energy) IAPE 2019
- chairman session no. S6: Numerical Simulation on the Microscopic and Macroscopic Levels, ICNF 2019, Spain

**Organizer of international events:**

2010: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO:

<http://www12.tuiasi.ro/facultati/sim/index.php?page=413>

2012: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO, 2-nd edition:

2014: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO, 3-rd edition:

2016: Summer School on ADVANCES IN HEAT TRANSFER ENHANCEMENT: FROM BASIC TO NANO, 4-th edition:

**Member in International Committee at different conferences: 95 invitations starting 2011. A selection is:**

- SOLARIS 2011, Czech Republic
- SUSTEM 2011, UK
- Conference IManE 2014, 27-30 May 2014, Chisinau, Moldavia
- International Conference on Computer and Systems Engineering Applications, CCSE 2014, 25-26 april Dubai
- Conference IManE 2015, 21-22 May 2015, Iasi, Romania
- International conference TEME 2015, Galati, Romania
- ISTP 26, Leoben, Austria
- SUSTEM 2015, Newcastle, UK
- 2015 International Conference on Systems Engineering and Computational Advances, 29-30 may 2015, China
- HTE '15: 13th International Conference on Heat Transfer, Thermal Engineering and Environment, Salerno Italy
- IMANE 2016, September 23-25, 2016 Kallithea Chalkidiki, Greece
- 7 th edition of INTERNATIONAL CONFERENCE ON MATERIAL SCIENCE & ENGINEERING, UgalMat 2016, MAY 19 - 21, 2016, GALATI, ROMANIA
- IMEIA 2016 Phuket, Thailand, 24-25 aprilie 2016
- The International Conference on Metallurgy & Materials (ICMM'16), Sofia, September 26 – 28, 2016
- 11th European Conference on Industrial Furnaces and Boilers, Portugal, 18-21 April 2017: - The 7th International Symposium on Advances in Computational Heat Transfer, CHT-17, Napoli, Italy, during 28 May - 02 June 2017
- The 21th edition of IManEE 2017 International Conference, May 25-26, 2017 Iasi, Romania
- TEME 2017: New trends in environmental and materials engineering, Galati, ROMANIA, 25-27 october
- European Symposium on Nanofluids (ESnf) Lisbon, Portugal, 8-10 October 2017
- ICPM 2017: 9TH International congress on precision machining, 6 - 9 september 2017, Athens, Greece
- TUIasi, First conference of Doctoral Schools, mai 2017, Iasi, Romania
- INTERNATIONAL CONGRESS ON CHEMISTRY AND MATERIALS SCIENCE, 5 - 7 OCTOBER, 2017 / ANKARA – TURKEY
- 2nd Renewable Energy Sources - Research and Business (RESRB) 2017 conference, June 19-21, Wrocław, Poland
- International Conference on Energy Management and Environmental Protection, Belek, Antalya, Turkey in February 1-4, 2018
- First International Conference on Energy Systems Engineering, (ICESE'17) 2017, Turcia, november 2017
- 1ST INTERNATIONAL CONFERENCE ON ADVANCES IN ENGINEERING AND TECHNOLOGY (ICAET)
- SCIENTIFIC COMMITTEE OF THE 2nd INTERNATIONAL SYMPOSIUM CIMEE'2018
- UGalMat 2018
- membru in Scientific Advisory Board (SAB) pentru conference RESRB 2018 – Belgium
- ICNF 2019, Castellon, Spania
- 3rd INTERNATIONAL ENGINEERING RESEARCH SYMPOSIUM (INERS'19) 5-7 SEPTEMBER 2019
- The 23rd edition of IManEE 2019 International Conference May 22 – 24, 2019 Pitesti, Romania
- The TUIASI Doctoral School International Conference, November 5th-7th, 2020, Iasi, Romania
- Building Services and Energy Efficiency, July 2, 2020 - July 3, 2020 - Iași, Romania

**- Expert reviewer for research grants:**

- expert EACI-IEE for Intelligent Energy Europe
- expert programme Fp7, HORIZON 2020
- expert HORIZON 2020, in aprilie-mai 2014, competition H2020-EE
- raporteur HORIZON 2020, in aprilie-mai 2014, competition H2020-EE
- expert HORIZON 2020, in octombrie 2014, competition H2020-LCE
- raporteur HORIZON 2020, in octombrie 2014, competition H2020
- expert HORIZON 2020, in martie 2015, competition H2020-EASME
- expert HORIZON 2020, in iunie 2015, competition H2020-second stage

- expert HORIZON 2020, in 2016, competition H2020
- rapporteur HORIZON 2020, in 2016, competition H2020
- expert NCRB Poland in martie 2017, februarie 2018
- expert EUROSTARS, programme CDI in 2017: 3 projects; 2018: 4 projects; 2019: 4 projects; 2020: 6 projects
- expert Kazakhstan Ministry of Research, 2017
- expert HORIZON 2020, in 2018, competition H2020
- expert HORIZON 2020, in 2019, competition RES
- expert NCRB Poland in march 2019, february 2020

**- Invited researcher:**

- Portugal, Lisbon
- France, Paris
- Italy: Aversa, Rome, Milano
- Spain, Madrid
- UK, London

**In June 2020 I was invited by the company Wattco Canada** to write several articles in regard to new heat transfer fluids, the first article is already available online at: <https://www.wattco.com/2020/08/nanoparticle-heat-transfer-fluids/>. Wattco is a manufacturing company developing electric heating products for use around the world since 1969. They offer solutions and not just products in oil and gas industries, renewable energy, HVAC systems, alternative solutions for projects to get off the ground in the most cost efficient way.

In local academic community, **at TUIASI**, I am/was member:

- Faculty SIM Board during 2012 – 2016 and from 2020 ongoing,
- Member in several expert teams for evaluating research (ex: projects type Compete, ARUT, UEFISCDI etc),
- Member in several teams of evaluation of didactical activity and accreditation of study programmes.



## 4. FINANCIAL RESOURCES SECURED FOR SCIENTIFIC RESEARCH OR DOCTORAL SCHOOL DEVELOPMENT

### 4.1. Funds attracted through national/international projects, private funds

Over the years, I coordinated as principal investigator 4 national grants and I was member in the scientific team for 14 research grants (see the list of scientific activities attached to this application, where the funded amounts are also highlighted). Plus, I coordinated at national level; 8 international grants of research/networking, gathering funds for PhD students, post doc, young and experienced researchers (grants that were able to fund conferences, networking activities, salaries, equipment etc).

In regard to PhD, a number of 20 PhD students received financing by participation in different research or networking projects that I led at university level.

Plus, at university level there are several projects that I manage and can offer grants for PhD students. Details are inserted in the next few lines.

#### *Funds attracted through national projects:*

- 3 grants in TUIASI, as director

- no of financed PhD students: 4

Grant no. 81 / 01.10.2007, Programme: PNCDI II, IDEAS

Theme title: Experimental and CFD techniques for energy optimization of electric furnaces by modifying inner geometry

Contractor: Technical University Gh. Asachi Iași

**Project manager: Minea Alina Adriana**

Grant no. 5882 / 2006, Programme MCT- EXCELENTA, type Excellence for young researchers

Theme title: Reducing energy consumptions of heating equipments at medium temperatures by intensifying heat and mass transfer

Contractor: Technical University Gh. Asachi Iași

**Project manager: Minea Alina Adriana**

Grant no. 63GR tema 28 / 2006, Programme CNCSIS, type AT (for young researchers)

Theme title: Energy optimization of heat treatment equipments of aluminum alloys by heat transfer efficiency. Metallurgical implications

Contractor: Technical University Gh. Asachi Iași

**Project manager: Minea Alina Adriana**

#### *Funds attracted through international projects:*

- PhD students financed through Erasmus plus, on my own agreements: 6

#### *Responsabil acorduri de cooperare care includ doctoranzii: 12*

1. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and Seconda Universita degli Studi di Napoli, Italia
2. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and MontainUniversitat Leoben, Austria
3. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and University of Beira Interior, Portugalia
4. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and UCTM, Bulgaria
5. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and University of Poitiers, Franta
6. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and Technical University of Athens, Grecia
7. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and University of Lisbon, Portugalia
8. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and University of Parma, Italia
9. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and Technologiko Ekpaideftiko Idryma (TEI) of Sterea Ellada, Grecia
10. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and University of Vigo, Spain

11. Coordinator Erasmus IP with Portugalia, Spania and Polonia (nr 2013-1-PT1-ERA10-16665).
12. Coordinator of agreement ERASMUS/ERASMUS+ between Universitatea Tehnică Gheorghe Asachi din Iasi and University of Trondheim, NORWAY

**Responsible inter-university agreement on research, including grants for PhD students: 3**

1. Tambov University, Russia
2. Parma University, Italia
3. University of Campania, Italia

**Grants for PhD students participation at international conferences and Training school: 9 actions through COST CA 15119: Overcoming Barriers to Nanofluids Market Uptake (NANO-UPTAKE)**

**PhD students grants by Erasmus KA2: 1, in project:**

Coordinator Romanian partner in Erasmus IP with Portugal, Spain and Poland (nr 2013-1-PT1-ERA10-16665).

**Other sources (as coordinator from TUIASI):**

- Research Network GreTInMat: Horizon 2020, BG05M2OP001-2.009-0015, coordonator: UCTM, Sofia, Bulgaria
- CEEPUS III network: RS-1012 Building Knowledge and Experience Exchange in CFD; Coordinator of the whole network: University of Novi Sad, Faculty of Technical Sciences, Department for Energy and Process Engineering, PhD Sinisa Bikic
- April 2020- April 2021: Dissemination Manager of COST Action CIG-15119: Nanofluids for convective heat transfer devices, COST\_ Horizon 2020
- April 2020- April 2021: Management Committee member of COST Action CIG-15119: Nanofluids for convective heat transfer devices, COST\_ Horizon 2020
- Octombrie 2019 – Octombrie 2023: Membru în Management Committee COST Action CA18234 - Computational materials sciences for efficient water splitting with nanocrystals from abundant elements, COST\_ Horizon 2020
- Octombrie 2019 – Octombrie 2023: Membru în Management Committee COST Action CA18202 - Network for Equilibria and Chemical Thermodynamics Advanced Research, COST\_ Horizon 2020

**4.2. Capacity to attract structural funds for PhD or postdoc studies**

“Perfecționarea continuă a personalului didactic din universitate – garanție a respectării deontologiei profesionale și a eticii academice (PERF-DEONTETIC)” cod CNFIS-FDI-2017-0065  
project contribution: **8 PhD students.**

12.09.2020

prof.univ.dr.habil.ing. Alina Adriana MINEA