

Fișă sintetică

de îndeplinire a standardelor minimale, urmărind punctual standardele minimale și obligatorii pentru abilitare stabilite de CNATDCU și aprobate de MECS

Standarde minimale pentru domeniile științifice**"Inginerie mecanică, mecatronică și robotică"**

Criteriu (conform O.M. nr. 6560/2012)	Criterii minimale (PROFESOR)	Realizat Candidat
Criteriul CDI - Activitatea de cercetare științifică, dezvoltare tehnologică și inovare	Minim 10 puncte	345.35
Criteriul DID - Activitatea didactică	Minim 10 puncte	11.42
Criteriul RIA - Recunoașterea și impactul activității	Minim 10 puncte	141

Punctajul detaliat pentru fiecare criteriu

Criteriu (conform O.M. nr. 6560/2012)	Criterii minimale (PROFESOR)	Realizat candidat
Criteriul CDI - Activitatea de cercetare științifică, dezvoltare tehnologică și inovare	Minim 10 puncte, din care minim 6 puncte CDI-ART	345.35

Indicatori criteriu CDI

CDI-ART: Articole științifice publicate în reviste de specialitate cotate ISI, sau în reviste/volume indexate ISI/BDI	minim 6 puncte (60% din punctaj standard minimal)	339.64
CDI-BRV: Brevete de invenții	maxim 4 puncte (max 40% din CDI realizat)	3
CDI-MON: Monografii de specialitate sau capitole în monografii de specialitate		2.71

Criteriu (conform O.M. nr. 6560/2012)	Criterii minimale (PROFESOR)	Realizat Candidat
Criteriul DID - Activitatea didactică	Minim 10 puncte, din care minim 6 puncte DID-MSD	11.42

Indicatori criteriu DID

DID-MSC: Manuale suport curs, format tipărit sau format electronic	minim 6 puncte (60% din punctajul minimal)	8.42
DID-LAB: Standuri/laboratoare pentru activități didactice realizate sau dezvoltate de candidat, cu lucrări de laborator elaborate de candidat și incluse în îndrumător laborator format tipărit sau format electronic	maxim 4 puncte (max 40% din punctajul minimal)	3

Criteriu (conform O.M. nr. 6560/2012)	Criterii minimale (PROFESOR)	Realizat Candidat
Criteriul RIA - Recunoașterea și impactul activității	Minim 10 puncte, din care minim 6 puncte RIA-GRT	141

Indicatori criteriu RIA

RIA-GRT: Director grant național sau internațional, sau responsabil partener în consorțiu	minim 6 puncte (60% din punctaj standard minimal)	52.87	116.49
RIA-CRT: Director contracte cu beneficiari din mediul economic		63.62	
RIA-GRT: Membru grant național sau internațional	maxim 4 puncte (max 40% din RIA realizat)	20.75	24.51
RIA-CRT: Membru contracte cu beneficiari din mediul economic		3.76	

Anexa nr. 17 - COMISIA INGINERIE MECANICĂ, MECATRONICĂ ȘI ROBOTICĂ STANDARDE MINIMALE NECESARE ȘI OBLIGATORII PENTRU CONFERIREA TITLURILOR DIDACTICE DIN ÎNVĂȚĂMÂNTUL SUPERIOR ȘI A GRADELOR PROFESIONALE DE CERCETARE – DEZVOLTARE

Se consideră trei criterii principale de evaluare, corespunzătoare următoarelor categorii de activități:

1. Activitate de cercetare științifică, dezvoltare tehnologică și inovare (acronim **CDI**)
2. Activitate didactică (acronim **DID**)
3. Recunoaștere și impactul activității (acronim **RIA**)

Tabelul 1. Criterii de evaluare și obiective asociate

Activitate de cercetare științifică, dezvoltare tehnologică și inovare (CDI)	Activitate didactică și profesională (DID)	Recunoaștere și impactul activității (RIA)
<ul style="list-style-type: none"> • Vizibilitate, calitate și recunoaștere internațională a rezultatelor CDI • Dezvoltare soluții tehnice și produse originale, cu impact socio-economic • Diseminarea rezultatelor cercetării-dezvoltării-inovării 	<ul style="list-style-type: none"> • Dezvoltare / modernizare infrastructură educațională • Dezvoltare și modernizare discipline generale și de specialitate • Dezvoltare de institute, centre, laboratoare de cercetare 	<ul style="list-style-type: none"> • Atragere resurse financiare prin granturi și contracte • Director sau responsabil partener granturi și contracte • Membru în echipa de cercetare grant/contract.

Pentru cadrele didactice din învățământul superior vor fi utilizate standarde minimale corespunzătoare celor trei criterii, CDI, DID și RIA, iar pentru acordarea gradelor profesionale în domeniul cercetării-dezvoltării vor fi utilizate criteriile CDI și RIA.

Indicatori de evaluare pentru standarde minimale

Tabelul 2. Indicatori specifici pentru domeniul Inginerie Mecanică, Mecatronică și Robotică

Criteriul CDI		Criteriul DID		Criteriul RIA	
Indicatori cu contribuție principală (obligatorie) în criteriu					
Rezultate și comunicări publicate ca articole științifice (CDI-ART)	min 60%	Manuale - suport curs, format tipărit sau format electronic (DID-MSD)	min 60%	Management proiecte a) Director grant național sau internațional, sau responsabil partener în consorțiu (RIA-GRA) b) Director contracte cu beneficiari din mediul economic (RIA-CTR)	min 60%
Indicatori cu contribuție complementară în criteriu					
a) Brevete de invenție (CDI-BRV) b) Produse, tehnologii și servicii inovative (CDI-PTS) c) Monografiile de specialitate (CDI-MON)		a) Laboratoare / standuri pentru activități didactice (DID-LAB) b) Platforme informatice educaționale (DID -PIE)		Activitate de cercetare – dezvoltare – inovare în cadrul granturilor / proiectelor	

Principii de evaluare cantitativă a criteriilor și de stabilire a standardelor minimale

Evaluarea criteriilor cu indicatorii din Tabelul 2 ține cont de următoarele principii:

- Punctajul corespunzător unui criteriu se constituie din suma punctajelor aferente indicatorilor principali și complementari ai criteriului
- Din valoarea punctajului unui criteriu, minim 60% trebuie să provină din indicatorii principali. Punctajul corespunzător standardului minimal pentru criteriu poate fi realizat integral cu indicatorii principali
- Din valoarea punctajului unui criteriu, maxim 40% poate să provină din indicatorii complementari. Punctajul corespunzător standardului minimal pentru criteriu NU poate fi realizat integral cu indicatorii complementari

Pentru ocuparea prin concurs a pozițiilor în învățământul superior sau în cercetare-dezvoltare, instituțiile pot adopta și alți indicatori de evaluare (principali sau complementari). Standardele minimale stabilite prin prezenta metodologie reprezintă criteriu de eligibilitate pentru participarea la concursurile pentru ocuparea pozițiilor în învățământul superior sau în cercetare-dezvoltare, respectiv pentru validarea rezultatului concursului de către CNATDCU.

Tabelul 3. Standarde minimale pentru domeniile științifice "Inginerie mecanică, mecatronică și robotică"

Crit.	Profesor universitar	Cercetător Științific gr. I	Conferențiar universitar	Cercetător Științific gr. II
CDI	Minim 10 puncte, din care minim 6 puncte CDI-ART	Minim 10 puncte, din care minim 6 puncte din CDI-ART	Minim 5 puncte, din care minim 3 puncte din CDI-ART	Minim 5 puncte, din care minim 3 puncte din CDI-ART
DID	Minim 10 puncte, din care minim 6 puncte din DID-MSD	Nu se aplică	Minim 5 puncte, din care minim 3 puncte din DID-MSD	Nu se aplică
RIA	Minim 10 puncte	Minim 10 puncte	Minim 5 puncte	Minim 5 puncte

Criteriul CDI

Indicatori CDI	Descriere	Punctaj	Observații
CDI-ART (min. 60% din punctaj standard minimal)	Articole științifice publicate în reviste de specialitate cotate ISI, sau în reviste/volume indexate ISI sau BDI	1 articol = $FI^*_{articol} + \sum FI^*_{citare}$ $FI^* \equiv 0.1 + \text{Factor Impact}$	<ul style="list-style-type: none"> Factorul de impact corectat FI^* ia în considerare articolele în publicații indexate BDI sau indexate ISI (fără factor de impact) prin valoarea de prag 0.1. Se pot lua în considerare articolele cu $FI^*_{articol} = 0$ dar cu $\sum FI^*_{citare} > 0$. Se exclud autocitățile Monografiile naționale trebuie să fie incluse în depozitul legal al Bibliotecii Naționale
CDI-BRV	Brevete de invenție	1 brevet de invenție internațional = 3 puncte 1 brevet de invenție național = 1 punct	
CDI-MON	Monografii de specialitate sau capitole în monografii de specialitate	1 punct = 10 pagini contribuție monografie în editură de prestigiu din străinătate 1 punct = 50 pagini contribuție editură națională	

*edituri de prestigiu din străinătate: Elsevier, Springer, John Wiley & Sons, McGraw-Hill, CRC Press, Francis & Taylor, Oxford University Press, Cambridge University Press, Academic Press, Kluwer Academic Publishers

Criteriul DID

Indicatori DID	Descriere	Punctaj	Observații
DID-MSD (min. 60% din punctaj minimal)	Manuale suport curs, format tipărit sau format electronic	1 punct = 50 pagini	<ul style="list-style-type: none"> Candidatul trebuie să fie autor principal (autor unic sau primul autor) al manualului. Pentru formatul electronic calitatea de autor principal este certificată de conducerea departamentului Pentru standurile sau laboratoarele didactice, calitatea de dezvoltator este certificată de conducerea departamentului
DID-LAB	Standuri/laboratoare pentru activități didactice realizate sau dezvoltate de candidat, cu lucrări de laborator elaborate de candidat și incluse în îndrumător laborator format tipărit sau format electronic	1 punct = 1 lucrare de laborator cu infrastructură realizată/dezvoltată de candidat	

Criteriul RIA

Indicatori RIA	Descriere	Punctaj	Observații
<i>Contribuție principală (minim 60%) în calitate de director grant/proiect</i>			
RIA-GRA	Director sau responsabil partener grant internațional	1 punct = 10000 EUR	<ul style="list-style-type: none"> Calitatea de director sau responsabil partener este certificată de reprezentantul legal al instituției în cadrul căreia a fost derulat grantul sau contractul Sunt luate în considerare sumele încasate exclusiv de instituția în care a fost derulat grantul (la proiectele tip consorțiu se consideră suma alocată instituției)
	Director sau responsabil partener grant național	1 punct = 50000 RON	
RIA-CTR	Director contract cu beneficiar din mediul economic internațional	1 punct = 2000 EUR	
	Director contract cu beneficiar din mediul economic național	1 punct = 10000 RON	
<i>Contribuție complementară în calitate de membru echipă cercetare grant/proiect</i>			
<ul style="list-style-type: none"> Calitatea de membru echipă proiect se certifică de instituția care a derulat proiectul, cu condiția ca membrul în echipa de proiect să încaseze manoperă Punctajul pentru sumele prevăzute la RIA-GRA și RIA-CTR este de 0.25 puncte pentru membru în echipă, în loc de 1 punct pentru director / responsabil partener 			

Criteriul CDI

Indicatori CDI	Descriere	Punctaj	Observații
CDI-ART (min. 60% din punctaj standard minimal)	Articole științifice publicate în reviste de specialitate cotate ISI, sau în reviste/volume indexate ISI sau BDI	1 articol = $FI_{articol}^* + \sum FI_{citare}^*$ $FI^* \equiv 0.1 + \text{Factor Impact}$	<ul style="list-style-type: none"> Factorul de impact corectat FI^* ia în considerare articolele în publicații indexate BDI sau indexate ISI (fără factor de impact) prin valoarea de prag 0.1 Se pot lua în considerare articolele cu $FI_{articol}^* = 0$ dar cu $\sum FI_{citare}^* > 0$. Se exclud autocitării Monografiile naționale trebuie să fie incluse în depozitul legal al Bibliotecii Naționale
CDI-BRV	Brevete de invenție	1 brevet de invenție internațional = 3 puncte 1 brevet de invenție național = 1 punct	
CDI-MON	Monografii de specialitate sau capitole în monografii de specialitate	1 punct = 10 pagini contribuție monografie în editură de prestigiu din străinătate 1 punct = 50 pagini contribuție editură națională.	

*edituri de prestigiu din străinătate: Elsevier, Springer, John Wiley & Sons, McGraw-Hill, CRC Press, Francis & Taylor, Oxford University Press, Cambridge University Press, Academic Press, Kluwer Academic Publishers

1. Indicatori CDI

1.1 CDI-ARFT: 333.22 puncte

Nr. crt.	Referinta bibliografica a publicatiei	FI_{2015}	Puncte ($FI_{corectat}$)
1.	Anton A.A., Muntean S. , Susan-Resiga R., (2016), SWIRL2D: An interface tracking algorithm for computing the two-dimensional swirling flows with stagnant region, Proceedings of the Romanian Academy Series A: Mathematics, Physics, Technical Sciences, Information Sciences, Vol. 17, No. 4, pp. 366-373 (WOS:000394189900012)	1.735	1.835
2.	Javadi A., Bosioc A., Nilsson H., Muntean S. , Susan-Resiga R., (2016) Experimental and Numerical Investigation of the Precessing Helical Vortex in a Conical Diffuser, With Rotor-Stator Interaction, Journal of Fluids Engineering, Vol. 138, Issue 8, Article no. 081106. Doi: 10.1115/1.4033416 (WOS:000379589700006)	1.283	3.699
2.1	Rajan G.K., Cimbala J.M., (2017) Computational and Theoretical Analyses of the Precessing Vortex Rope in a Simplified Draft Tube of a Scaled Model of a Francis Turbine, Journal of Fluids Engineering, Vol. 139, Issue 2, Article no. 021102. DOI: 10.1115/1.4034693 (WOS:000395119800002)	1.283	
2.2	Javadi A., Nilsson H., (2017) Active flow control of the vortex rope and pressure pulsations in a swirl generator, Engineering Applications of Computational Fluid Mechanics, Vol. 11, Issue 1, pp: 30-41. DOI: 10.1080/19942060.2016.1235515 (WOS:000386338500003)	1.033	
3.	Drăghici I.A., Muntean S. (autor correspondent), Bosioc A.I., Ginga G., Anton L.E., (2016) Unsteady Pressure Field Analysis at Pump Inlet Equipped with a Symmetrical Suction Elbow, Proceedings of the Romanian Academy Series A: Mathematics, Physics, Technical Sciences, Information Sciences, Vol. 17, No 3, pp. 237-244. (WOS:000383527500007)	1.735	1.835
4.	Ciocan T., Susan-Resiga R., Muntean S. (autor correspondent), (2016) Modelling and optimization of the velocity profiles at the draft tube inlet of a Francis turbine within an operating range, Journal of Hydraulic Research, Vol. 54, No. 1, pp. 74-89. DOI: 10.1080/00221686.2015.1119763 (WOS:000370980100005)	1.471	1.571
5.	Susan-Resiga R., Muntean S. , Stuparu A., Bosioc A.I., Tanasa C., Ighisan C., (2016) A variational model for swirling flow states with stagnant region, European Journal of Mechanics B-Fluids, Vol. 55, No. 1, pp. 104-115. DOI: 10.1016/j.euromechflu.2015.09.002 (WOS:000367762900010)	1.418	2.801
5.1	Goyal R., Cervantes M.J., Gandhi B.K., (2017) Vortex Rope Formation in a High Head Model Francis Turbine, Journal of Fluids Engineering, Vol. 139, Issue 4, Paper ID 041102 doi: 10.1115/1.4035224 (WOS:000395120500002)	1.283	
6.	Tănasă C., Muntean S. , Bosioc A., Susan-Resiga R., Ciocan T., (2016) Influence of the air admission on the unsteady pressure field in a decelerated swirling flow, UPB Scientific Bulletin, Series D: Mechanical Engineering, Vol. 78, No. 3, pp. 161 – 170 (SCOPUS database)	0	0.1
7.	Muntean S. , Bosioc A.I., Drăghici I., Anton L.E., (2016) Hydrodynamic analysis of the flow field induced by a symmetrical suction elbow at the pump inlet, IOP Conference Series-Earth and Environmental Science, Vol. 49, No. 3, Paper No 032014. DOI: 10.1088/1755-1315/49/3/032014 (SCOPUS database)	0	0.1
8.	Bosioc A.I., Muntean S. , Drăghici I., Anton L.E., (2016) Hydrodynamic analysis of the flow in	0	0.1

	an axial rotor and impeller for large storage pump, IOP Conference Series-Earth and Environmental Science, Vol. 49, No. 3, Paper No 032016. DOI: 10.1088/1755-1315/49/3/032016 (SCOPUS database)		
9.	Muntean S. , Tănasă C., Bosioc A.I., Moș D.C., (2016) Investigation of the plunging pressure pulsation in a swirling flow with precessing vortex rope in a straight diffuser, IOP Conference Series-Earth and Environmental Science, Vol. 49, No. 8, Paper No 082010. DOI: 10.1088/1755-1315/49/8/082010 (SCOPUS database)	0	0.1
10.	Susan-Resiga R., Muntean S. , Popescu C., (2016) Swirling flow computation at the trailing edge of radial-axial hydraulic turbines, IOP Conference Series-Earth and Environmental Science, Vol. 49, No. 8, Paper No 082012. DOI: 10.1088/1755-1315/49/8/082012 (SCOPUS database)	0	0.1
11.	Tănasă C., Muntean S. , Ciocan T., Susan-Resiga R., (2016) 3D Numerical Simulation versus Experimental Assessment of Pressure Pulsations Using a Passive Method for Swirling Flow Control in Conical Diffusers of Hydraulic Turbines, IOP Conference Series-Earth and Environmental Science, Vol. 49, No. 8, Paper No 082018. DOI: 10.1088/1755-1315/49/8/082018 (SCOPUS database)	0	0.1
12.	Muntean S. , Draghici I., Ginga G., Anton L.E., Baya A., (2015) Hydrodynamic Design of a Storage Pump Impeller using Inverse Method and Experimental Investigation of the Global Performances, WasserWirtschaft, Vol. 105, No. 1, pp. 28-32. (WOS:000354657300007)	0.102	0.202
13.	Susan-Resiga R., Ighisan C., Muntean S. , (2015) Mathematical Model for the Swirling Flow Ingested by the Draft Tube of Francis Turbines, WasserWirtschaft, Vol. 105, No. 1, pp. 23-27. (WOS:000354657300006)	0.102	0.202
	Bedelean B., Muntean S. , Campean M., (2015) Analysis of Drying Kiln Aerodynamics Based on a Full Three-Dimensional Turbulent Numerical Computation, Drvna Industrija, Vol. 67, No. 1, Pages 53-64. DOI: 10.5552/drind.2016.1515 (WOS:000379333100007)	0.319	0.419
14.	Anton A., Muntean S. , (2015) A Method for Data Handling Numerical Results in Parallel OpenFOAM Simulations, AIP Conference Proceedings, 1702, Paper No. 080005. ISSN: 0094-243X DOI: 10.1063/1.4938800 (SCOPUS database)	0	0.1
15.	Bosioc A.I., Muntean S. , Susan-Resiga R.F., Borbath I., Vékás L., (2015) Numerical Analysis of the Temperature Field in A Magneto-Rheological Brake, AIP Conference Proceedings, 1702, Paper No. 080002. DOI: 10.1063/1.4938797 (SCOPUS database)	0	0.1
16.	Tănasă C., Susan-Resiga R.F., Muntean S. , Stuparu A., Bosioc A.I., Ciocan T., (2015) Numerical Assessment of a Novel Concept for Mitigating the Unsteady Pressure Pulsations Associated to Decelerating Swirling Flow with Precessing Helical Vortex, AIP Conference Proceedings, 1702, Paper No. 080003. DOI: 10.1063/1.4938798 (SCOPUS database)	0	0.1
17.	Ciocan T., Susan-Resiga R., Muntean S. , (2014) Improving draft tube hydrodynamics over wide operating range, Proceedings of the Romanian Academy Series A: Mathematics, Physics, Technical Sciences, Information Sciences, Vol. 15, Issue 2, pp: 182-190. (WOS:000336714400011)	1.735	3.118
17.1	Lyutov A.E., Chirkov D.V., Skorospelov V.A., Turuk P.A., Cherny S.G (2015) Coupled Multipoint Shape Optimization of Runner and Draft Tube of Hydraulic Turbines, Journal of Fluids Engineering, Vol. 137, Issue 11, Article No: 111302. DOI: 10.1115/1.4030678 (WOS:000362509900010)	1.283	
18.	Negru R., Muntean S. , Pasca N., Marsavina L., (2014) Failure assessment of the shaft of a pumped storage unit, Fatigue and Fracture of Engineering Materials and Structures, Vol. 37, No. 7, pp. 807-820. DOI: 10.1115/1.4030678 (WOS:000362509900010)	1.838	16.052
18.1	Gallo P., Bressan S., Morishita T., Itoh T., Berto F., (2017) Analysis of multiaxial low cycle fatigue of notched specimens for type 316L stainless steel under non-proportional loading, Theoretical and Applied Fracture Mechanics, Vol. 89, Issue: 6, pp: 79-89 DOI: 10.1016/j.tafmec.2017.01.009 (WOS:000400217200008)	2.205	
18.2	Zhou H., Wen J., Wang Z., Zhang Y., Du X. (2016) Fatigue crack initiation prediction of cope hole details in orthotropic steel deck using the theory of critical distances, Fatigue and Fracture of Engineering Materials and Structures, Vol. 39, Issue 9, pp: 1051-1066 DOI: 10.1111/ffe.12402 (WOS:000383726700001)	1.838	
18.3	Zhang, L.K., Ma Z.Y., Wu Q.Q. and Wang X.N., (2016) Vibration analysis of coupled bending-torsional rotor-bearing system for hydraulic generating set with rub-impact under electromagnetic excitation, Archive of Applied Mechanics, Vol. 86, Issue 9, pp. 1665-1679. DOI: 10.1007/s00419-016-1142-8 (WOS:000382009000009)	1.103	
18.4	Negru R., Serban D.A., Marsavina L. and Magda, A. (2016) Lifetime prediction in medium-cycle fatigue regime of notched specimens, Theoretical and Applied Fracture Mechanics, Vol. 84, Special Issue: SI, pp: 140-148 DOI: 10.1016/j.tafmec.2016.03.006 (WOS:000381535400015)	2.205	
18.5	Xu B.B., Chen D.Y., Zhang H., Wang F.F., (2015) The modeling of the fractional-order shafting system for a water jet mixed-flow pump during the startup process,	2.834	

	Communications in Nonlinear Science and Numerical Simulation, Vol. 29, Issue 1-3, pp: 12-24. DOI: 10.1016/j.cnsns.2015.04.018 (WOS:000357933500002)		
18.6	Berto F. (2015) Crack Initiation at V-Notch Tip under In-Plane Mixed Mode Loading: A Review of the Fictitious Notch Rounding Concept, Physical Mesomechanics, Vol. 18, Issue 4, pp: 273-282. DOI: 10.1134/S1029959915040013 (WOS:000367472800001)	1.724	
18.7	Berto F. (2015) A criterion based on the local strain energy density for the fracture assessment of cracked and V-notched components made of incompressible hyperelastic materials, Theoretical and Applied Fracture Mechanics, Vol. 76, pp: 17-26. DOI: 10.1016/j.tafmec.2014.12.008 (WOS:000352049800003)	2.205	
19.	Muntean S., Susan-Resiga R., Câmpian V.C., Dumbravă C., Cuzmoș A., (2014) In situ unsteady pressure measurements on the draft tube cone of the Francis turbine with air injection over an extended operating range, UPB Scientific Bulletin, Series D: Mechanical Engineering, Vol. 6, No. 3, pp: 173-180. International Conference Energy – Environment (CIEM2013) (SCOPUS database)	0	6.898
19.1	Trivedi C., Cervantes M.J. (2017) Fluid-structure interactions in Francis turbines: A perspective review, Renewable & Sustainable Energy Reviews, Part I, Vol. 68, pp. 87-101. DOI: 10.1016/j.rser.2016.09.121 (WOS:000391899200008)	6.798	
20.	Drăghici I., Bosioc A.I., Muntean S., Anton L.E., (2014) Experimental investigation of the non-uniform inflow generated by the symmetrical section elbow of a large pump, UPB Scientific Bulletin, Series D: Mechanical Engineering, Vol. 76, No. 3, pp: 207-214. (SCOPUS database)	0	0.1
21.	Javadi A., Bosioc A.I. Nilsson, H., Muntean S., Susan-Resiga R.F., (2014) Velocity and pressure fluctuations induced by the precessing helical vortex in a conical diffuser, IOP Conference Series-Earth and Environmental Science, Vol. 22, Paper No 032009. DOI: 10.1088/1755-1315/22/3/032009 (WOS:000347441900067)	0	5.040
21.1	Rajan G.K., Cimbala J.M., (2017) Computational and Theoretical Analyses of the Precessing Vortex Rope in a Simplified Draft Tube of a Scaled Model of a Francis Turbine, Journal of Fluids Engineering, Vol. 139, Issue 2, Article no. 021102. DOI: 10.1115/1.4034693 (WOS:000395119800002)	1.283	
21.2	Javadi A., Nilsson H., (2017) Active flow control of the vortex rope and pressure pulsations in a swirl generator, Engineering Applications of Computational Fluid Mechanics, Vol. 11, Issue 1, pp: 30-41. DOI: 10.1080/19942060.2016.1235515 (WOS:000386338500003)	1.033	
21.3	Su W.T., Li X.B., Lan C.F., An S., Wang J.S., Li F.C., (2016) Chaotic dynamic characteristics of pressure fluctuation signals in hydro-turbine, Journal of Mechanical Science and Technology, Vol. 30, Issue 11, pp. 5009-5017. DOI: 10.1007/s12206-016-1020-x (WOS:000388131900022)	0.761	
21.4	Javadi A., Nilsson H., (2015) Time-accurate Numerical Simulations of Swirling Flow with Rotor-stator Interaction, Flow Turbulence and Combustion, Vol. 95, Issue 4, pp. 755-774. doi: 10.1007/s10494-015-9632-2 (WOS:000364930200007)	1.863	
22.	Bosioc A.I., Muntean S., Tănasă C., Susan-Resiga R.F., Vékás L., (2014) Unsteady pressure measurements of decelerated swirling flow in a discharge cone at lower runner speeds, IOP Conference Series-Earth and Environmental Science, Vol. 22, Paper No 032008. DOI: 10.1088/1755-1315/22/3/032008 (WOS:000347441900066)	0	4.600
22.1	Rajan G.K., Cimbala J.M., (2017) Computational and Theoretical Analyses of the Precessing Vortex Rope in a Simplified Draft Tube of a Scaled Model of a Francis Turbine, Journal of Fluids Engineering, Vol. 139, Issue 2, Article no. 021102. DOI: 10.1115/1.4034693 (WOS:000395119800002)	1.283	
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72.7	Esfahanian V., Akbarzadeh P., Hejranfar K., (2012) An improved progressive preconditioning method for steady non-cavitating and sheet-cavitating flows, International Journal for Numerical Methods in Fluids, Vol. 68 Issue 2, pp. 210-232, doi: 10.1002/flid.2502 (WOS:000298587200005)	1.447	
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82.3	Kumar P., Saini R.P., (2010) Study of cavitation in hydro turbines-A review, Renewable and Sustainable Energy Reviews, Vol. 14, Issue 1, pp. 374-383. DOI: 10.1016/j.rser.2009.07.024 (WOS:000271279100025)	6.798	
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84.1	Escaler X., Ekanger J.V., Francke H.H., Kjeldsen M., Nielsen T.K., (2015) Detection of Draft Tube Surge and Erosive Blade Cavitation in a Full – Scale Francis Turbine, Journal of Fluids Engineering, Vol. 137, Issue 1 doi: 10.1115/1.4027541 (WOS:000348049600003)	1.283	
84.2	Biluš I., Predin A., Škerget L., (2007) The extended homogenous cavitation transport model, Journal of Hydraulic Research, Vol. 45, Issue 1, pp. 81-87 (WOS:000246821600009)	1.471	
85.	Muntean S., Bernad S., Resiga R., Anton I., (2003) 3D caviating flow in hydraulic Francis, Workshop on Numerical Methods in Fluid Mechanics and FLUENT Applications, Timisoara, Romania.	0	6.798
85.1	Kumar P., Saini R.P., (2010) Study of cavitation in hydro turbines-A review, Renewable and Sustainable Energy Reviews, Vol. 14, Issue 1, pp. 374-383. DOI: 10.1016/j.rser.2009.07.024 (WOS:000271279100025)	6.798	
TOTAL 1.1			339.639

1.2 CDI-BRV: 3.0 puncte

Nr. crt.	Referinta brevetului	Puncte
1.	Muntean S. , Susan-Resiga R., Bosioc I.A., Constantin R.-S., Maxim D.-I., Tănasă C., Vékás L., Borbáth I., Anton L.E. (2016) Equipment for controlling instabilities of swirling flow from the conical diffuser of hydraulic turbines, Patent Number RO131408-A0.	1
2.	Susan-Resiga R., Muntean S. , Tănasă C., Bosioc I.A., Ciocan T., Popescu C., (2015) Equipment for controlling instabilities of swirling flow from the conical diffuser of hydraulic turbines, Patent Number RO131408-A0. Derwent Primary Accession Number: 2016-61594H	1
3.	Susan-Resiga R., Tănasă C., Bosioc I.A., Ciocan T. A., Stuparu A., Muntean S. , (2014) Method and equipment for controlling the swirling flow through the conical diffuser of hydraulic turbines, Patent Number(s): RO130075-A0 ; RO130075-A8 Derwent Primary Accession Number: 2015-23118S	1
TOTAL 1.2		3

1.3 CDI-MON: 2.71 puncte

Nr. crt.	Referinta carte/capitol	Nr. pag.	Puncte
1.	Muntean S. , Bosioc A.I., Szakal R.A., Vékás L., Susan-Resiga R.F. (2017) Hydrodynamic investigations in a swirl generator using a magneto-rheological brake. In da Silva L.F.M. (Ed.), Advanced Structured Materials, Vol. 65, pp. 209-218. Springer ISBN: 978-3-319-50783-5 DOI: 10.1007/978-3-319-50784-2_17	10	0.200
2.	Bosioc A.I., Beja T.E., Muntean S. , Borbáth I., Vékás L. (2017) Experimental investigations of Magneto-Rheological Fluids in air and water used for brakes and clutches. In da Silva L.F.M. (Ed.), Advanced Structured Materials, Vol. 65, pp. 197-207. Springer ISBN: 978-3-319-50783-5 DOI: 10.1007/978-3-319-50784-2_16	11	0.202
3.	Pasca N., Marsavita L., Negru R., Muntean S. (2013) Estimation of the Stress Intensity Factor for 3D Cracked T – Joint. In: Jármai K., Farkas J. (eds) Design, Fabrication and Economy of Metal Structures, pp. 273-280. Springer ISBN: 978-3-642-36690-1 DOI: 10.1007/978-3-642-36691-8_41	8	0.200
4.	Susan-Resiga R., Muntean S. (2009) Decelerated Swirling Flow Control in the Discharge Cone of Francis Turbines. In: Xu J., Wu Y., Zhang Y., Zhang J. (eds) Fluid Machinery and Fluid Mechanics, pp. 89-96. Springer ISBN: 978-3-540-89748-4 DOI: 10.1007/978-3-540-89749-1_12	8	0.400
5.	Susan-Resiga R., Muntean S. , Baya A., Anton L.E., Milos T., Stuparu A., (2007) Chapter 3. Mathematical and Numerical Analysis of Axisymmetric Swirling Flow. In Susan-Resiga R., Bernad S., Muntean S. (Editors) Vortex Hydrodynamics and Applications, Eurostampa Publishing House, Timisoara. ISBN: 978-973-687-659-2	40	0.133
6.	Muntean S. , Susan-Resiga R., Bosioc A., Stuparu A., Baya A., Campian V., Nedelcu D., Balint D., Safta C., Stoia M., (2007) Chapter 5. Turbomachinery Swirling Flows. In Susan-Resiga R., Bernad S., Muntean S. (Editors) Vortex Hydrodynamics and Applications, Eurostampa Publishing House, Timisoara, ISBN: 978-973-687-659-2	30	0.060
7.	Muntean S. , Susan-Resiga R.F., Anton I., (2004) Mixing interface algorithm for 3D turbulent flow analysis of the GAMM Francis turbine. In: Vad J., Lajos T., Schilling R. (Eds.) Modelling Fluid Flow, pp. 359-372. Springer ISBN: 978-3-642-06034-2 DOI: 10.1007/978-3-662-08797-8_25	14	0.467
8.	Susan-Resiga R., Muntean S. , Bernad S., Balint D., Balint I., (2003) Metode Moderne de Calcul Paralel pentru Simularea Curgerii Fluidelor, Editura Orizonturi Universitare, Timișoara, ISBN 978-973-638-064-5	262	1.048
TOTAL 1.3			2.71

Criteriul DID			
Indicatori DID	Descriere	Punctaj	Observații
DID-MSC (min. 60% din punctaj minimal)	Manuale suport curs, format tipărit sau format electronic	1 punct = 50 pagini	<ul style="list-style-type: none"> Candidatul trebuie să fie autor principal (autor unic sau primul autor) al manualului. Pentru formatul electronic calitatea de autor principal este certificată de conducerea departamentului Pentru standurile sau laboratoarele didactice, calitatea de dezvoltator este certificată de conducerea departamentului
DID-LAB	Standuri/laboratoare pentru activități didactice realizate sau dezvoltate de candidat, cu lucrări de laborator elaborate de candidat și incluse în îndrumător laborator format tipărit sau format electronic	1 punct = 1 lucrare de laborator cu infrastructură realizată/dezvoltată de candidat	

2. Indicatori DID: 11.42 puncte

2.1 DID-MSC: 8.42 puncte

Nr. crt.	Referinta manualului	Nr. pag.	Puncte
1.	Muntean S., (2008) Analiza numerica a curgerii in turbinele Francis, Editura Orizonturi Universitare, Timișoara. ISBN 978-973-638-355-7	376	7.52
2.	Anton L., Balint D., Baya A., Badarau R., Bălășoiu V., Bej A., Milos T., Muntean S., Resiga R., Stuparu A., (2004) Mecanica Fluidelor, Masini Hidraulice si Actionari. Aplicatii de Calcul, Editura Orizonturi Universitare, Timișoara, 2004, ISBN 978-973-638-076-9	296	0
TOTAL			7.52

Nr. crt.	Referinta materialului (epaper, aplicatie simpla) in format electronic pe Platforma Informatica pentru Ingineria Fluidelor (PiiF)	Nr. pag.	Puncte
1.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în tubul de aspirație.	3	0.06
2.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în distribuitor.	9	0.18
3.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în camera spirală.	17	0.34
4.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în rotorul Kaplan	4	0.08
5.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în rotorul Francis	4	0.08
6.	Monitorizarea și reglarea turbinelor hidraulice. Stabilitatea funcționării (vârtejul funie)	3	0.06
7.	Analiza curentului la intrare in rotor	1	0.02
8.	Analiza preliminara a variantelor pentru alegerea turbinei Turgo	1	0.02
9.	Calculul Coeficientului de Cavitate	1	0.02
10.	Proiectarea preliminara a turbinei Banki	1	0.02
11.	Transpunerea rezultatelor de la model la prototip pentru o turbina hidraulica	1	0.02
TOTAL (cf. UPT/MMUT nr. 171/10.05.2017)			0.9
TOTAL 2.1			8.42

2.2 DID-LAB: 3.0 puncte

Nr. crt.	Referinta laboratoare/standuri pentru activitati didactice dezvoltate de candidat	Puncte
1.	Laborator de simularea numerica a curgerii fluidelor (cf. UPT/MMUT nr. 172/10.05.2017)	1
2.	Stand experimental pentru investigarea curgerilor cu vartej (cf. UPT/MMUT nr. 173/10.05.2017)	1
3.	Stand experimental pentru investigarea performantelor energetice si cavitationale a pompelor centrifuge (cf. UPT/MMUT nr. 174/10.05.2017)	1
TOTAL 2.2		3

Criteriul RIA

Indicatori RIA	Descriere	Punctaj	Observații
<i>Contribuție principală (minim 60%) în calitate de director grant/proiect</i>			
RIA-GRA	Director sau responsabil partener grant internațional	1 punct = 10000 EUR	<ul style="list-style-type: none"> Calitatea de director sau responsabil partener este certificată de reprezentantul legal al instituției în cadrul căreia a fost derulat grantul sau contractul Sunt luate în considerare sumele încasate exclusiv de instituția în care a fost derulat grantul (la proiectele tip consorțiu se consideră suma alocată instituției)
	Director sau responsabil partener grant național	1 punct = 50000 RON	
RIA-CTR	Director contract cu beneficiar din mediul economic internațional	1 punct = 2000 EUR	
	Director contract cu beneficiar din mediul economic național	1 punct = 10000 RON	
<i>Contribuție complementară în calitate de membru echipă cercetare grant/proiect</i>			
<ul style="list-style-type: none"> Calitatea de membru echipă proiect se certifică de instituția care a derulat proiectul, cu condiția ca membrul în echipa de proiect să încaseze manoperă Punctajul pentru sumele prevăzute la RIA-GRA și RIA-CTR este de 0.25 puncte pentru membru în echipă, în loc de 1 punct pentru director / responsabil partener 			

3. Indicatori RIA: 139.895 puncte**3.1 RIA-GRA: 72.58 puncte**

Nr. crt.	Referinta granturi internationale	Valoare grant	Puncte
1.	Muntean S. (Director proiect) , High Performance Computing for 3D Unsteady Swirling Flow Simulation in Draft Tube, HPC Europa project, Contract No. 506079, 2005.	-	0
2.	Susan-Resiga R., Muntean S. (membru al echipei) , L. Vekas, Bica D., Bernad S., Balint D., Stuparu A., Giula G., Turbomachinery swirling flow optimisation and control with technology of magnetorheological fluid systems. SWISS National Science Foundation, Grant SCOPES 2006-2008, IB7320-110942/1, perioada 2006-2008.	75340 CHF	1.25
TOTAL			1.25

Nr. crt.	Referinta granturi nationale	Valoare grant (lei)	Puncte
1.	Muntean S. (Director proiect 2016) , Susan-Resiga R., Stuparu A., Bosioc A., Tanasa C., s.a., Self-induced instabilities of the swirling flow in hydraulic turbines far from the best efficiency regime (iTURBOSWIRL), Proiect PN-II-ID-PCE-2012-4-0634, Contract 17/2013, period 2013 - 2016. (http://mh.mec.upt.ro/iTURBOSWIRL/)	(Alocare 2016) 385084	7.70
8.	Tanasa C., Ciocan T., Bosioc A., Predoiu I., Popescu C., Muntean S. (consultant stiintific) , Todiruta M., Mitigating the self-induced instabilities of the decelerated swirling flow using pulsating water jet, Proiect PN-II-RU-TE-2014-4-0489, Contract 81/2015. Period: 2015-2017. (http://mh.mec.upt.ro/RPJD-DJPR/)	550000	2.75
8.	Vekas L., Stoian F.D., Borbath I., Zaharescu T., Muntean S. (membru al echipei) , Bosioc A., s.a. Nanofluidice magnetice si fluide magnetizabile nano-micro compozite cu magnetizatie ridicata: aplicatii în etansari rotitoare pentru presiuni ridicate si conditii grele de exploatare, respectiv în dispozitive magnetoreologice de control - MagNanoMicroSeal, Proiect PN-II-PT-PCCA-2011-3.2-0538, Contract 157/2012. Parteneri: Academia Română – Filiala Timișoara – coordonator proiect, Universitatea "Politehnica" din Timișoara – partener P1, S.C. ROSEAL S.A. Odorheiul Secuiesc – partener P2, Institutul National de Cercetare-Dezvoltare pentru Inginerie Electrica – ICPE-CA Bucuresti – partner P3. Period: 2012-2016. (http://acad-tim.tm.edu.ro/magnanomicroseal/)	3300000	16.5

2.	Muntean S. (Director proiect) , Susan-Resiga R., Bernad S., Stuparu A., Bosioc A., Tanasa C., O nouă metodă de control a curgerilor cu vartej prin injecție de apă și feedback hidrodinamic, Proiect CNCISIS IDEI PCE 799, Contract 688/2009, perioada 2009-2011. (http://acad-tim.tm.edu.ro/gr-jrp/index.php?page=pce799)	463760	9.28
3.	Muntean S. (Director proiect) , Anton I., Vekas L., Bica D., Bernad S., Popa C., Jurca G., Paut V., Stepanov V., Albu S., Botezatu I., Muntean S.G., Junc A., Militaru M., CEEX-M1-C2-1185 – iSMART-flow, contract MATNANTECH no. 64/2006, Integrearea tehnologiilor magneto-reologice speciale si al controlului avansat a curgerii in aplicatii industriale – iSMART-flow, Parteneri: Academia Română – Filiala Timișoara – coordonator proiect, Universitatea "Politehnica" din Timișoara – partener P1, Universitatea de Vest din Timișoara – partener P2, Universitatea "Eftimie Murgu" din Reșița – partener P3, perioada 2006-2008. (http://acad-tim.tm.edu.ro/iSMART-flow/).	1460000	29.2
4.	Muntean S. (Director proiect) , Balint D., Frunză Teodora, Stuparu A., Deatcu M., Utilizarea metodelor moderne pentru simularea numerica si analiza curgerilor tridimensionale in turbinele hidraulice cu aplicatii practice la turbinele Francis si Kaplan, Grant CNCISIS tip AT, (Cod 220/2003, Cod 238/2004), perioada 2003-2004.	126000	2.52
5.	Muntean S. (Responsabil proiect P2) , Susan-Resiga R., Bernad S, Stuparu A., Bosioc A., Anton I., PN2 – Inovare - 1047, CTEMF, contract C59/2007, Cercetari Teoretice si Experimentale pentru realizarea unui model de turbina Francis in doemniul turatiilor specifice (ns=350-400 rpm) destinat valorificarii eficiente a potentialului hidroenergetic din diferite amenajari cu aplicatie la CHE Cindere - CTEMF, Parteneri: S.C. HydroEngineering S.A. Resita– coordonator proiect, P1 – Universitatea „Eftimie Murgu” Resita, P2 – Academia Română – Filiala Timișoara, perioada 2007-2009. (http://www.hydrorom.com/PC2.htm) perioada 2007-2009	(Alocare P2) 50000	1
6.	Muntean S. (Responsabil proiect P3) , Bernad S, Anton I., CEEX-M1-C2-4409 – MARGAS, contract IPA X2C16/2006, Modele și metode numerice avansate în ingineria navelor de transport gaze lichefiate – MARGAS, Parteneri: Institutul de Cercetare Proiectare Construcții Navale ICEPRONAV Galați – coordonator proiect, P1 – Universitatea „Dunărea de Jos” Galați, P2 – Universitatea „Politehnica” din Timișoara, P3 – Academia Română – Filiala Timișoara, perioada 2006-2008. (http://www.icepronav.ro/ceex/margas.html)	(Alocare P3) 104500	2.09
7.	Muntean S. (Responsabil proiect P1) , Bernad S., Anton I., Hidrodinamica vârtejurilor și aplicații. Grant CNCISIS tip A Consorțiu no. 33 (Partener P1, Academia Română – Filiala Timișoara), perioada 2005-2007. (http://mh.mec.utt.ro/accord-fluid/)	(Alocare P1) 53500	1.08
8.	Bernad S., Muntean S. (membru al echipei) , Vekas L., Bica D., Sofonea V., Bernad E., Resiga D., CEEX-M1-C2-1180 - CARDIOCOMP, contract VIASAN no: 81/2006, Optimizarea computerizată a procesului de diagnostic, intervenție terapeutică și prognostic a bolilor cardiovasculare – CARDIOCOMP, Parteneri: Academia Română – Filiala Timișoara – coordonator, Universitatea "Politehnica" din Timișoara – partener P1, Universitatea "Politehnica" din București – partener P2, Institutul de Boli Cardiovasculare din Timișoara – partener P3, Universitatea de Medicină și Farmacie "Victor Babeș" din Timișoara – partener P4, perioada: 2006-2008. (http://acad-tim.tm.edu.ro/cardiocomp/)	1395000	0
9.	Bernad S., Muntean S. (membru al echipei) , Anton L., Baya A., Balint D., Stuparu A., CEEX-M1-C2-2566 - THARVEST, contract AMCSIT no. 192/2006, Interinfluența turbinelor hidraulice stabilizate cu ax de rotație vertical de tip ACHARD - THARVEST, Parteneri: Universitatea Tehnică de Construcții București – coordonator proiect, Universitatea "Politehnica" din București – partener P1, Academia Română – Filiala Timișoara – partener P2, perioada 2006-2008. (http://hidraulica.utcb.ro/tharvest/)	200000	0
10.	Resiga R, Muntean S. , Bernad S., Anton L., Baya A., Balint D., Stuparu A., Hasmatuchi V., Frunza T., CEEX-M1-C2-2297 - TEHNOMED, contract IPA no. X2C05/2006, Hidrogazodinamica și transferul de masă la coloane de bule fine cu aplicare în tehnologii avansate de mediu - TEHNOMED, Parteneri: INCDIE ICPE-CA – coordonator proiect, Universitatea "Politehnica" din București – partener P1, Universitatea Tehnică de Construcții București – partener P2, Universitatea	83500	0

	"Politehnica" din Timișoara – partener P3, S.C. Institutul Național al Sticlei S.A. – partener P4, RAGC –Târgoviște – partener P5, perioada 2006-2008.		
11.	Bernad S., Resiga R., Muntean S. (membru al echipei) , Balint D., Frunză T., Dezvoltarea de modele matematice și numerice pentru curgerea cavitațională bifazică cu aplicații industriale și biomedicale. Grant CNCSIS tip A nr. 730, perioada 2005-2007.	58000	0
12.	Anton I, Susan-Resiga R., Muntean S. (membru al echipei) , Bernad S., Modelarea numerică și analiza curgerilor cavitaționale bifazice în turbinele hidraulice, Grantul Academiei Române, (Gar 103/2004, Gar 362/2003), perioada 2003-2004.	4000	0.08
13.	Susan-Resiga R., Sofonea V., Bernad S., Muntean S. (membru al echipei) , Balint D., Frunză Teodora, Cristea A., Broștean M., Metode Moderne de Calcul Paralel pt. Simularea Numerică a Curgerii Fluidelor și Aplicații la Mașini și Sisteme Hidro-pneumatice, Grant CNCSIS tip A, (Cod 24/2004, 29/2003, 109/2002), perioada 2002-2004.	33800	0.17
TOTAL din care			72.58
RIA-GRA (director)			52.87
RIA-GRA (membru in echipa)			20.75

3.2 RIA-CTR: 67.38 puncte

Nr. crt.	Referinta contract international	Valoare contract	Puncte
1.	Resiga R., Muntean S. (membru al echipei) , Anton A., Ciocan T., Ighisan C., Modelling the 2D Swirling Flow in Francis Turbine for Optimization of Draft Tube performances within an operating range, Contract UPT, beneficiar Alstom Hydro, Grenoble, France, 2012-2013.	30000 Euro	0.75
2.	Resiga R., Muntean S. (membru al echipei) , Ciocan T., Modelling and Optimization of the Swirling Flow Ingested by the Draft Tube of a Francis Turbine within an Operating Range, Contract UPT, beneficiar Alstom Hydro, Grenoble, France, 2011-2012.	30000 Euro	0.75
3.	Resiga R., Muntean S. (membru al echipei) , Bernad S., Hasmatuchi V., Taming the Vortex Rope Project – TAVORO, Contract UPT nr. 5214/19.04.2007, beneficiar General Electric Hydro Canada, 2007-2008.	7500 USD	0.15
4.	Resiga R., Bernad S., Susan-Resiga D., Muntean S. (membru al echipei) , Rheological investigations of polymer samples under controlled inert atmosphere, Contract UPT nr. 1/1.03.2005, beneficiar Ezus Lyon, Franta, 2005.	2300 Euro	0
5.	Resiga R., Bernad S., Muntean S. (membru al echipei) , Cooling cell hydrodynamics, Contract UPT nr. 1510787/2005, beneficiar Siemens VDO Automotive Germany, 2005.	1800 Euro	0
6.	Resiga R., Bernad S., Muntean S. (membru al echipei) , Thermo-hydrodynamic optimization of a cooling cell with partial cross-walls, Contract UPT nr. 1521266/2005, beneficiar Siemens VDO Automotive Germany, 2005.	3600 Euro	0
TOTAL			1.65

Nr. crt.	Referinta contract national	Valoare contract (lei)	Puncte
1.	Anton L.E., Muntean S. (Responsabil partener P1) , s.a. Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale pompelor PRO 10-195 de la SP Jidoaia – Etapa 3. Contract Nr. 175/30.12.2010 beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara– coordonator proiect, Academia Română – Filiala Timișoara – partener P1. Perioada 2011-2012	(Alocare P1) 84000	8.4
2.	Baya A., Muntean S. (Responsabil partener P1) , s.a., Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale turbinelor		

	Francis 57.5 – 128.5 CHE Bradisor – Etapa 3. Contract Nr. 174/30.12.2010, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara– coordonator proiect, Academia Română – Filiala Timișoara – partener P1. Perioada 2011	(Alocare P1) 70000	7
3.	Anton L.E., Muntean S. (Responsabil partener P1) , s.a., Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale pompelor PRO 10-195 de la SP Jidoaia – Etapa 2. Contract Nr. 72-113.03/05.11.2009, UPT BC119/2009 beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara– coordonator proiect, Academia Română – Filiala Timișoara – partener P1. Perioada 2009	(Alocare P1) 45000	4.5
4.	Baya A., Muntean S. (Responsabil partener P1) , s.a., s.a., Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale turbinelor Francis 57.5 – 128.5 CHE Bradisor – Etapa 2. Contract Nr. 71-113.03/05.11.2009, BC 120/2009 beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara– coordonator proiect, Academia Română – Filiala Timișoara – partener P1. Perioada 2009	(Alocare P1) 64000	6.4
5.	Anton L.E., Muntean S. (Responsabil partener P1) , s.a. Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale pompelor PRO 10-195 de la SP Jidoaia. Contract Nr. 97-113.03/16.10.2008, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara– coordonator proiect, Academia Română – Filiala Timișoara – partener P1. Perioada 2008	(Alocare P1) 60000	6
6.	Baya A., Muntean S. (Responsabil partener P1) , s.a., Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale turbinelor Francis 57.5 – 128.5 CHE Bradisor. Contract Nr. 96-113.03/16.10.2008, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara– coordonator proiect, Academia Română – Filiala Timișoara – partener P1, Universitatea Eftimie Murgu Resita – partener P2, S.C. HydroEngineering S.A. Resita - partener P3. Perioada 2008	(Alocare P1) 30000	3
7.	Muntean S. (Responsabil contract) , Bernad S., Resiga R., Stuparu A., Bosioc A., Baya A., Anton L., Anton I., Studii privind analiza numerică a curgerii în traseul hidraulic al CHE Munteni ce urmărește determinarea încărcării pe paletel rotative în punctele de funcționare în care turbina operează cel mai frecvent, Contract ARFT nr. 9875/30.11.2007 beneficiar S.C Hidroelectrica S.A. Sucursala Cluj, 2007.	56000	5.6
8.	Muntean S. (Responsabil contract) , Campian V., Nedelcu D., Liuba G., Cuzmos A., Dumbrava C., Anton I., Masurarea pulsatiilor de presiune in conul tubului de aspiratie, in regimuri stationare si nestationare ale turbinei Francis de la CHE Ruieni, Contract ARFT nr. 58/04.10.2007 beneficiar S.C Hidroelectrica S.A. Sucursala Caransebes, 2007.	50000	5
9.	Muntean S. (Responsabil contract) , Campian V., Nedelcu D., Grando I., Liuba G., Cuzmos A., Dumbrava C., Anton I., Masurarea pulsatiilor de presiune in conul tubului de aspiratie, in regimuri stationare si nestationare ale turbinei Francis de la CHE Munteni, Contract ARFT nr. 5007/27.06.2007 beneficiar S.C Hidroelectrica S.A. Sucursala Cluj, 2007.	50000	5
10.	Muntean S. (Responsabil contract) , Resiga R., Bernad S., Balint D., Baya A., Determinarea debitului turbinat prin traseul hidraulic al hidroagregatelor de la CHE Gura Lotrului, Turnu si Daiesti. Contract Academia Romana nr. 164-12.02/05.08.2004, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Academia Română – Filiala Timișoara– coordonator proiect, Universitatea "Politehnica" din Timișoara – partener P1, Universitatea Eftimie Murgu Resita – partener P2.	37815	3.78
11.	Muntean S. (Responsabil contract) , Balint D., Bernad S., Susan-Resiga R., Anton I., Analiza CFD în punctul optim de funcționare a turbinei Francis cu rapiditate $n_s^{kW} = 285$. Contract UPT nr. 54/16.04.2004, beneficiar S.C. RECONT	13178	1.32

	S.A.		
12.	Muntean S. (Responsabil contract) , Balint D., Bernad S., Susan-Resiga R., Anton I., Stabilirea poziției paletelor la statorul turbinei HA Zăvideni în vederea optimizării curgerii apei prin acesta. Contract Academia Romana nr. 90-12.02/05.05.2004, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea.	8000	0.8
13.	Muntean S. (Responsabil contract) , Balint D., Frunza T., Stuparu A., Deatcu M., Anton I., Susan-Resiga R., Analiza comparativa a doua pozitii de coloane statorice si influenta asupra campului hidrodinamic din rotorul turbinei Kaplan de la CHE Dragasani. Contract Academia Romana nr. 23-77.03-146/09.04.2003, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea.	4200	0.42
14.	Muntean S. (Responsabil partener P1) , Bernad S., Barbat T., Junc C., Anton I., Studii privind comportarea și exploatarea echipamentelor hidroenergetice, Contract UPT 120-12.02/24.08.2007, beneficiar S.C. Hidroelectrica S.A. Râmnicu -Vâlcea, 2007. Parteneri: Universitatea "Politehnica" din Timișoara – coordonator proiect, Academia Română – Filiala Timișoara– partener P1, Universitatea Tehnica de Constructii Bucuresti– partener P2, S.C. HydroEngineering S.A Reșița – subcontractant.	(Alocare P1) 64000	6.4
15.	Anton L.E., Muntean S. (membru al echipei) , s.a., Determinarea caracteristicilor reale de functionare ale HA de la statiile de pompare Petrimanu, Jidoaia si Lotru Aval. Contract UPT nr. 87-12.02/04.05.2004, beneficiar Hidroelectrica SA, Sucursala Hidrocentrale Ramnicu Valcea. Parteneri: Universitatea "Politehnica" din Timișoara – coordonator proiect, Universitatea Tehnica de Constructii Bucuresti – partener P1, Academia Română – Filiala Timișoara– partener P2. Perioada 2004-2006	67000	1.67
16.	Susan-Resiga R., Muntean S. (membru al echipei) , Balint D., Simularea numerica a curgerii apei prin rotorul turbinei de la CHE Portile de Fier I si determinarea distributiei de presiune pe paleta pentru doua regimuri de functionare, Contract UPT nr. 380/20.12.2005, beneficiar Centrul de Cercetari in Hidraulica, Automatizari si Procese Termice al Universitatii „Eftimie Murgu” Resita, 2005-2006.	15000	0.375
17.	Daniela Resiga, R. Resiga, S. Bernad, S. Muntean (membru al echipei) , Aspecte ale comportarii plastice si elastice ale solurilor alcoxidice in timpul tranzitiei de la sol la gel, Contract UPT nr. 343/27.10.2005, beneficiar Institutul de Chimie al Academiei Romane – Filiala Timisoara, perioada octombrie 2005.	1300	0
18.	Resiga R., Bernad S., Muntean S. (membru al echipei) , Consultanta si expertiza tehnica pentru simulare numerica si analiza a curgerii cu transfer termic in echipamentele de uscare PET, Contract UPT nr. 325/27.09.2005, beneficiar SC ZOPPAS Industries – Romania, perioada august – octombrie 2005.	17500	0
19.	Resiga R., Bernad S., Oprisa D., Muntean S. (membru al echipei) , Numerical simulation of flow with heat convection and radiation for a dryer heating system, Contract UPT nr. 320/19.09.2005, beneficiar SC ZOPPAS Industries – Romania, perioada septembrie – decembrie 2005.	8800	0
20.	Balint D., Muntean S. (membru al echipei) , Bernad S., Resiga R., Anton I., Analiza numerică în afara punctului optim de funcționare a turbinei Francis Recont $n_s^{kW} = 285$. Contract UPT 213/20.01.2005, beneficiar S.C. Recont S.A.	2500	0.0625
21.	Bernad S., Muntean S. (membru al echipei) , Susan-Resiga R., Determinări Magnetice si Reologice. Contract UPT nr. 165/27.10.2004, beneficiar Institutul de Chimie al Academiei Romane – Filiala Timișoara.	500	0
22.	Bernad S., Muntean S. (membru al echipei) , Susan-Resiga R., Determinări Reologice. Contract UPT nr. 164/27.10.2004, beneficiar Institutul de Chimie al Academiei Romane – Filiala Timișoara.	1100	0
23.	Bernad S., Susan-Resiga R., Muntean S. (membru al echipei) , Balint D., Simularea numerică și analiza fenomenului curgerii cu transfer termic prin convecție și radiație pentru rezistența electrică al mașinii de spălat. Contract UPT nr. 155/29.09.2004, beneficiar ZOPPAS Industries – Romania.	10600	0
24.	Bernad S., Susan-Resiga R., Muntean S. (membru al echipei) , Stuparu A., Simularea numerică și analiza fenomenului curgerii 3D cu radiație și convecție	8350	0

	naturală pentru o rezistență electrică dată. Contract UPT nr. 44/30.03.2004, beneficiar ZOPPAS Industries – Romania.		
25.	Milos T., Anton L., Baya A., Resiga R., Muntean S. (membru al echipei) , Bernad S., Balint D., Stuparu A., Analiza curgerii și optimizarea răcirii în circuitul interior de ventilație al motorului asincron cu rotorul în scurt-circuit tip TIS 1350/430-6 de 420 kW; 690 V; 215-430 rpm, Contract UPT nr. 10/21.01.2004, beneficiar U.C.M. Reșița S.A.	8000	0
26.	Susan-Resiga R., Bernad S., Muntean S. (membru al echipei) , Catona C., Simularea numerică și analiza fenomenului curgerii 3D cu convecție naturală prin cutia termostatului ce echipează radiatoarele electrice. Contract Nr. 1228/16.12.2003, beneficiar ZOPPAS Industries – Romania.	2950	0
27.	Daniela Susan-Resiga, Susan-Resiga R., Bernad S., Muntean S. (membru al echipei) , Aspecte ale comportării reologice a gelurilor polimerice, Contract Nr. 1238/18.11.2003, beneficiar Institutul de Chimie Timișoara al Academiei Române.	6000	0
28.	Bernad S., Susan-Resiga R., Muntean S. (membru al echipei) , Simularea numerică și analiza fenomenului curgerii compresibile turbulente pentru varianta 2D axial-simetrică cu schimb de căldură pentru sticlele de tip PET, având diametrul tijei de distribuție al aerului de răcire de 12 mm, Contract Nr. 1204 /23.10.2003 , beneficiar ZOPPAS Industries – Romania.	2750	0
29.	Daniela Susan-Resiga, Susan-Resiga R., Bernad S., Muntean S. (membru al echipei) , Determinarea proprietăților reologice ale țiteiurilor aditivate cu polimeri, Contract Nr. 1206/29.10.2003, beneficiar U.P.B. - Centrul de Cercetări Energetice și de Protecția Mediului.	4000	0
30.	Bernad S., Susan-Resiga R., Muntean S. (membru al echipei) , Simularea numerică și analiza fenomenului curgerii compresibile turbulente pentru varianta 2D axial-simetrică cu schimb de căldură pentru sticlele de tip PET, Contract Nr. 1164/07.08.2003, beneficiar ZOPPAS Industries – Romania.	3500	0
31.	Bernad S., Susan-Resiga D., Susan-Resiga R., Muntean S. (membru al echipei) , Marinică O., Determinarea proprietăților reologice de curgere ale fluidului de foraj cu microbule, Contr. Nr. 991/2002, beneficiar ICPT Câmpina.	2400	0
32.	Bernad S., Muntean S. (membru al echipei) , Susan-Resiga R., Numerical Simulation and Analysis of the Polyethylene Terephthalate Flow in 72 Cavities Hot Runner Configuration Taking into Account the Variable PET Viscosity, Contr. Nr. 958/2002, beneficiar ZOPPAS Industries Romania.	5000	0
33.	Susan-Resiga R., Bernad S., Muntean S. (membru al echipei) , Numerical Simulation, Analysis and Comparison of the Polyethylene Terephthalate Flow into Hot Runner-Configurations. Contr. Nr. 942/2002, beneficiar ZOPPAS Industries Romania.	4302	0
TOTAL din care			67.37
RIA-CTR (director)			63.62
RIA-CTR (membru in echipa)			3.76

Catre,

Dr.ing. Sebastian MUNTEAN

Referitor la standardele minimale pentru abilitare in domeniul Inginerie Mecanica

In perioada 2010-2013 s-a derulat proiectului „Creșterea calității învățământului superior de inginerie - Platformă Informatică pentru Ingineria Fluidelor (PiiF)”, POSDRU/86/1.2/S/61830, coordonat de Universitatea Tehnică de Construcții București, manager de proiect **Prof.dr.ing. Anton ANTON**, proiect finanțat din Fondul Social European prin Programul Operațional Sectorial pentru Dezvoltarea Resurselor Umane 2007-2013.

In cadrul acestui proiect, echipa de la Universitatea Politehnica Timisoara - partener P2, a fost coordonată de **Prof.dr.ing. Romeo SUSAN-RESIGA** si a contribuit la realizarea **Platformei Informatice pentru Ingineria Fluidelor (PiiF)** (<http://www.piif.ro/>) ce include materiale in format electronic ce se adreseaza studentiiilor, masteranzanzilor, cercetatorilor si cadrelor didactice.

Prin prezenta se certifica faptul ca domnul **dr.ing. Sebastian MUNTEAN**, a fost incadrat in perioada 2012 – 2013 (13 luni) in proiectul mai sus mentionat, pe pozitia de **expert pe termen scurt** si a contribuit cu urmatoarele materiale (epaper-uri, aplicatii simple) in format electronic pe platforma PiiF:

Nr. crt.	Referinta materialului (epaper, aplicatie simpla) de curs in format electronic pe platforma PiiF	Nr. pag.
1.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în tubul de aspirație	3
2.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în distribuitor	9
3.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în camera spirală.	17
4.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în rotorul Kaplan	4
5.	Hidrodinamica turbinelor hidraulice. Analiza curgerii în rotorul Francis	4
6.	Monitorizarea și reglarea turbinelor hidraulice. Stabilitatea funcționării (vârtejul funie)	3
7.	Analiza curentului la intrare în rotor	1
8.	Analiza preliminară a variantelor pentru alegerea turbinei Turgo	1
9.	Calculul Coeficientului de Cavitație	1
10.	Proiectarea preliminară a turbinei Banki	1
11.	Transpunerea rezultatelor de la model la prototip pentru o turbina hidraulică	1

Conf.dr.ing. Ioan LAZA
Director Departament MMUT

Prof. dr. ing. Romeo SUSAN-RESIGA
Responsabil proiect UPT - partener P2

Timisoara, 10 Mai 2017

Catre,

Dr.ing. Sebastian MUNTEAN

Referitor la standardele minimale pentru abilitare in domeniul Inginerie Mecanica

Prin prezenta se certifica faptul ca domnul **dr.ing. Sebastian MUNTEAN**, in calitatea de șef al Laboratorului de Simulare Numerica si Calcul Paralel, din cadrul Centrului de Cercetari pentru Ingineria Sistemelor cu Fluide Complexe, Universitatea Politehnica Timisoara, din anul 2001 a contribuit la realizarea **Laboratorului de simularea numerica a curgerii fluidelor** care a fost utilizat in cadrul orelor de seminar si laborator cu studentii anilor III/IV Inginerie Mecanica si studentii anilor I si II master la specializarea Masini si echipamente hidropneumatice pentru disciplina: **Metode numerice** avand ca titular pe Prof.dr.ing. Romeo SUSAN-RESIGA.

Conf.dr.ing. Ioan LAZA

Prof. dr. ing. Romeo SUSAN-RESIGA

Director Departament MMUT



Timisoara, 10 Mai 2017

Catre,

Dr.ing. Sebastian MUNTEAN

Referitor la standardele minimale pentru abilitare in domeniul Inginerie Mecanica

In perioada 2006 - 2008 s-a derulat proiectul intitulat „Integrarea tehnologiilor magneto-reologice speciale si al controlului avansat a curgerii in aplicatii industriale – iSMART-flow”, CEEEX-M1-C2-1185 – iSMART-flow, contract MATNANTECH no. 64/2006, avand parteneri: Academia Română – Filiala Timișoara – coordonator proiect, Universitatea ”Politehnica” din Timișoara – partener P1, Universitatea de Vest din Timișoara – partener P2, Universitatea ”Eftimie Murgu” din Reșița – partener P3, perioada 2006-2008.

Echipa partenerului P1 - Universitatea Politehnica Timisoara din cadrul proiectului mai sus mentionat a fost coordonata de **Prof.dr.ing. Romeo SUSAN-RESIGA** si a realizat **standul experimental pentru investigarea curgerilor cu vârtej** utilizat de studentii de anul IV Inginerie Mecanica, specializarea Masini si echipamente hidropneumatice la elaborarea lucrarilor de diploma, studentii anilor I si II master de la specializarea Masini si echipamente hidropneumatice la elaborarea lucrarilor de master si 3 doctoranzi coordonati de Prof.dr.ing. Romeo SUSAN-RESIGA si-au elaborat tezele de doctorat utilizand aceasta infrastructura.

Prin prezenta se certifica faptul ca domnul **dr.ing. Sebastian MUNTEAN**, in calitatea de director al proiectului mai sus mentionat a contribuit la realizarea **standul experimental pentru investigarea curgerilor cu vârtej** si la activitatile educationale si de cercetare derulate.

Conf.dr.ing. Ioan LAZA

Director Departament MMUT

Prof. dr. ing. Romeo SUSAN-RESIGA

Nr. 174 / 10.05.2017

Timisoara, 10 Mai 2017

Catre,

Dr.ing. Sebastian MUNTEAN

Referitor la standardele minimale pentru abilitare in domeniul Inginerie Mecanica

Universitatea "Politehnica" din Timișoara in calitate de institutie coordonatoare, a derulat in perioada 2007 – 2011, proiectele mentionate mai jos

- *Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale pompelor PRO 10-195 de la SP Jidoaia – Etapa 3, Contract Nr. 175/30.12.2010;*
- *Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale pompelor PRO 10-195 de la SP Jidoaia – Etapa 2, Contract Nr. 72-113.03/05.11.2009;*
- *Cercetari si experimentari privind imbunatatirea performantelor energetice si cavitationale ale pompelor PRO 10-195 de la SP Jidoaia – Etapa 1, Contract Nr. 97-113.03/16.10.2008;*
- *Studii privind comportarea și exploatarea echipamentelor hidroenergetice, Contract UPT 120-12.02/24.08.2007;*

avand beneficiar Hidroelectrica S.A., Sucursala Hidrocentrale Ramnicu Valcea care au avut ca scop dezvoltarea si testarea unor solutii pentru reabilitarea pompelor de la SP Jidoaia.

In cadrul acestor proiecte coordonate de **Prof.dr.ing. Liviu Eugen ANTON** s-a realizat **standul experimental pentru investigarea performantelor energetice si cavitationale a pompelor centrifuge**. Aceasta platforma este utilizata de studentii de anul IV Inginerie Mecanica, specializarea Masini si echipamente hidropneumatice la elaborarea lucrarilor de diploma, studentii anilor I si II master de la specializarea Masini si echipamente hidropneumatice la elaborarea lucrarilor de master si 2 doctoranzi coordonati de Prof.dr.ing. Liviu Eugen ANTON si-au elaborat tezele de doctorat utilizand aceasta infrastructura.

Prin prezenta se certifica faptul ca domnul **dr.ing. Sebastian MUNTEAN**, in calitatea de director stiintific si responsabil al partenerului 1 – Academia Romana – Filiala Timișoara al proiectelor mai sus mentionate a contribuit la realizarea **standul experimental pentru investigarea performantelor energetice si cavitationale a pompelor centrifuge** si la activitatile educationale si de cercetare derulate.

Conf.dr.ing. Ioan LAZA

Director Departament MMUT

Prof.dr. ing. Liviu Eugen ANTON