

Zoznam pôvodných publikovaných vedeckých prác, odborných prác, umeleckých prác, učebníc, učebných textov, riešených výskumných úloh, citácií a ohlasov, prednášok doma a v zahraničí

Zoznam pôvodných publikovaných vedeckých prác, odborných prác a umeleckých prác, učebníc, učebných textov, prehľad riešených výskumných úloh, realizovaných technických projektov alebo umeleckých projektov, patentov a autorských osvedčení, vynálezov a technických diel, prehľad preukázateľných citácií a ohlasov na vedecké práce, odborné práce, umelecké práce alebo umeleckú tvorbu, prehľad prednášok a prednáškových pobytov doma a v zahraničí podľa Vyhlášky MŠVVaŠ SR č. 456/2012 Z. z. o centrálnom registri evidencie publikáčnej činnosti a centrálnom registri evidencie umeleckej činnosti a podľa § 4 ods. 2 e) vyhlášky.

Výstupy kategórie A

1. TAKÁCS, Gergely - ROHAL-ILKIV, Boris. *Model Predictive Vibration Control : Efficient Constrained MPC Vibration Control for Lightly Damped Mechanical Structures*. 1st. ed. London : Springer Verlag London, 2012. 512 s. ISBN 978-1-4471-2332-3. V databáze: SCOPUS. Kategória publikáčnej činnosti podľa Vyhlášky MŠVVaŠ SR č. 456/2012 Z. z.: AAA. Kategória publikáčnej činnosti podľa AK SR OV 16 pre informatické vedy, automatizáciu a telekomunikáciu: „A“. Indexované v Master Journal List (MJL), IF=0.722. Karentovaný článok.
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Ostatné výstupy kategórie B alebo C

AFA Publikované pozvané príspevky na zahraničných vedeckých konferenciách v kat. B,C pre OV16 AK SR.

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19. TAKÁCS, Gergely - POLÓNI, Tomáš - ROHAL'ILKIV, Boris. Pseudo real-time state and parameter estimation of a vibrating active cantilever using the moving horizon observer. In ICSV 21 [elektronický zdroj] : proceedings of the 21st International Congress on Sound and Vibration. Beijing, China, 13-17 July, 2014. Beijing : Acoustical Society of China, 2014, CD-ROM, [8] p. ISBN 978-83-62652-66-2. V databáze: SCOPUS.

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- AFC25 TAKÁCS, Gergely - ONDREJKOVIČ, Karol - HULKÓ, Gabriel. A low-cost non-invasive slag detection system for continuous casting. In *IFAC-PapersOnLine*. Vol. 50, 20th World congress on the International Federation of Automatic Control. Toulouse, France. July 9-14, 2017 (2017), s. 440-447, online. ISSN 2405-8963. V databáze: SCOPUS.

AFD Publikované príspevky na domácich vedeckých konferenciách

- AFD01 FERENCEY, Viktor - ELIÁŠ, Jozef - TAKÁCS, Gergely. Application of hybrid electric technology for motor vehicles = Použitie hybridnej elektrickej technológie pre motorové vozidlá. In *TRANSFER 2005 : Využívanie nových poznatkov v strojárskej praxi. Zborník prednášok. 2. diely*. Trenčín : Trenčianska univerzita Alexandra Dubčeka v Trenčíne, 2005, s.178-181. ISBN 80-8075-070-X.
- AFD02 HULKÓ, Gabriel - BELAVÝ, Cyril - TAKÁCS, Gergely - ONDREJKOVIČ, Karol - ZAJÍČEK, Peter - KOŠČO, Roland. Control of technological processes modelled by COMSOL Multiphysics as Distributed Parameter Systems. In *Mechanical Engineering 2010 : 13th international conference on the occasion of the 70th anniversary of the beginning of education of mechanical engineering students at the Slovak University of Technology in Bratislava. Bratislava, 21.10. 2010. Proceedings of the papers*. Bratislava : Slovak University of Technology in Bratislava, 2010, s.S2-28 - S2-42. ISBN 978-80-227-3304-5.
- AFD03 POLÓNI, Tomáš - TAKÁCS, Gergely - KVASNICA, Michal - ROHAL'ILKIV, Boris. System identification and explicit predictive control of cantilever lateral vibrations. In *Process Control 2009 : Proceedings of the 17th International Conference on Process Control 2009. Štrbské Pleso, Slovak Republic, 9.-12.6.2009*. Bratislava : STU v Bratislave, 2009, s.309-313. ISBN 978-80-227-3081-5.

- AFD04 TAKÁCS, Gergely - ROHAL'ILKIV, Boris. Model predictive control in vibration attenuation. In *ERIN 2008. Education, Research, Innovation : 2. medzinárodná konferencia mladých výskumníkov a doktorandov. Bratislava, 23.-24.4. 2008. - Zborník abstraktov*. 1. vyd. Bratislava : STU v Bratislave, 2008, s.nestr. ISBN 978-80-227-2849-2.
- AFD05 TAKÁCS, Gergely. Experimental verification of the closed-loop response of an active vibration control system modeled in ANSYS. In *Modelling of Mechanical and Mechatronic Systems. MMaMS 2011 [elektronický zdroj] : Proceedings of the 4th International Conference. Herľany, Slovakia. 20.- 22. Sept. 2011. Košice : Technická univerzita v Košiciach, 2011*, s.478-486. ISBN 978-80-553-0731-2.
- Ohlasy:
1. [3] BADAWY, Abdelrahman A. - MASRY, M.M. Positive position feedback active vibration control of a smart cantilever beam using ANSYS. In *EAME 2015 : International conference of Electrical, Automation and Mechanical Engineering* : Atlantis Press, 2015, S. 509-513. ISBN 978-94-62520-71-4.
- AFD06 TAKÁCS, Gergely - OTČENÁŠ, Jakub - ROHAL'ILKIV, Boris. Semi-active countersurveillance measures for laser microphones. In *Noise and vibration in practice. Hluk a kmitanie v praxi. : Proceedings of the 18th international acoustic conference. Kočovce, Slovakia, June 3-4, 2013. 1st.ed. Bratislava : Nakladateľstvo STU, 2013, s.p. 147-154. ISBN 978-80-227-3946-7.*

BFA Abstrakty odborných prác zo zahraničných podujatí (konferencie...)

- BFA01 ABDOLLAHPOURI, Mohammad - JOHANSEN, Tor Arne - TAKÁCS, Gergely - ROHAL'ILKIV, Boris. Globally convergent moving horizon state and parameter estimation with application to vibrating cantilever beams. In *4th European Conference on Computational Optimization, Belgium, 12-14 September 2016 : Book of Abstracts*. 1. vyd. Leuven : KU Leuven, 2016, S. 25.

DAI Dizertačné a habilitačné práce

- DAI01 TAKÁCS, Gergely. *Efficient model predictive control applied on active vibration attenuation*. Bratislava : Slovak University of Technology in Bratislava, 2009. 230 s.

FAI Redakčné a zostavovateľské práce knižného charakteru (bibliografie, encyklopédie, katalógy, slovníky, zborníky...)

- FAI01 BELAVÝ, Cyril (ed.) - TAKÁCS, Gergely (ed.). *Principia Cybernetica 2014 [elektronický zdroj] : recenzovaný zborník z 37. stretnutia katedier a ústavov automatizácie, kybernetiky, informatiky, riadenia a riadiacej techniky strojníckych a technologických fakúlt univerzít v SR a ČR. Kočovce, SR, 3.-5.9. 2014. 1.vyd.* Bratislava : Nakladateľstvo STU, 2014. USB kľúč, 71 s. ISBN 978-80-227-4220-7.

Štatistika: kategória publikačnej činnosti

AAA	Vedecké monografie vydané v zahraničných vydavateľstvách	2
ABC	Kapitoly vo vedeckých monografiách vydané v zahraničných vydavateľstvách	1

ABD	Kapitoly vo vedeckých monografiách vydané v domácich vydavateľstvách	2
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ADC	Vedecké práce v zahraničných karentovaných časopisoch	8
ADF	Vedecké práce v ostatných domácich časopisoch	1
ADM	Vedecké práce v zahraničných časopisoch registrovaných v databázach Web of Science alebo SCOPUS	1
AED	Vedecké práce v domácich recenzovaných vedeckých zborníkoch, monografiách	11
AFA	Publikované pozvané príspevky na zahraničných vedeckých konferenciách	3
AFC	Publikované príspevky na zahraničných vedeckých konferenciách	25
AFD	Publikované príspevky na domácich vedeckých konferenciách	6
BFA	Abstrakty odborných prác zo zahraničných podujatí (konferencie...)	1
DAI	Dizertačné a habilitačné práce	1
FAI	Redakčné a zostavovateľské práce knižného charakteru (bibliografie, encyklopédie, katalógy, slovníky, zborníky...)	1
Súčet		66
Štatistika: kategória ohlasov		
1	Citácie v zahraničných publikáciách, registrované v citačných indexoch Web of Science a databáze SCOPUS	93
3	Citácie v zahraničných publikáciách neregistrované v citačných indexoch	29
4	Citácie v domácich publikáciách neregistrované v citačných indexoch	7
Súčet		129

Vedenie a riešenie výskumných projektov

Zodpovedný riešiteľ výskumného projektu

- VEGA 1/0144/15, „Aktívne tlmenie vibrácií mechanických konštrukcií pomocou numericky akcelerovaného prediktívneho riadenia“, 2015-2017. Úspešne ukončený s vynikajúcimi výsledkami.
- KEGA 005STU-4/2018, "Založenie pilotného laboratória pre výučbu technológie programovateľných hradlových polí", 2018-2020, Riešený projekt.
- Grantová schéma na podporu excelentných tímov mladých výskumníkov v podmienkach Slovenskej technickej univerzity v Bratislave. „Adaptívne získavanie energie z vibrácií s priebežnou identifikáciou parametrov“, 2015-2017. Úspešne ukončený projekt.
- AKTVIB, Programu na podporu mladých výskumníkov 2010, "Aktívne tlmenie vibrácií a nasadenie solárnych panelov cez výpočtovo efektívne prediktívne algoritmy", 2010. Úspešne ukončený projekt.

-
5. KATV-MTV, Programu na podporu mladých výskumníkov 2011, "Kompozitné aktuátory na tlmenie vibrácií pomocou materiálov s tvarovou pamäťou", 2011.
Úspešne ukončený projekt.

Riešiteľ výskumného projektu

6. APVV-14-0399, "Nelineárne riadenie s obmedzeniami a odhad stavu mechatronických systémov pre vnorené platformy riadenia"
7. APVV-14-0244, "Vývoj softvérovej podpory s využitím fyzikálnej simulácie pre optimalizáciu procesov plynulého odlievania ocele ako systémov s rozloženými parametrami pre Železiarne Pobrezová, a. s."
8. APVV-17-0214, "Kolaboratívny robot pre použitie v laboratóriu"
9. APVV SK-FR-2015-6464 „Pokročilé techniky pre praktickú implementáciu stratégii prediktívneho riadenia“,
10. APVV-0090-10 „Metódy prediktívneho riadenia s modelom a spoločný odhad stavu a parametrov pre rýchle nelineárne mechatronické systémy“
11. APVV-0280-06 „Prediktívne riadenie mechatronických systémov s rýchlosťou dynamikou a obmedzeniami“
12. APVV-0160-07 „Pokročilé metódy modelovania, riadenia a návrhu mechatronických systémov ako sústav so sústredeným vstupom a rozloženým výstupom“
13. APVV-0131-10 „High-tech riešenia pre technologické procesy a mechatronické komponenty ako riadené systémy s rozloženými parametrami“
14. VEGA 1/0317/17, "Pokročilá lokalizácia a navigácia mobilných robotických systémov na báze nelineárneho numerického pozorovateľa", Riešený projekt.
15. VEGA 1/0138/11: „Riadenie dynamických systémov reprezentovaných numerickými štruktúrami ako sústav s rozloženými parametrami“
16. VEGA 1/0036/08 „Pokročilé metódy modelovania, riadenia a návrhu systémov s rozloženými parametrami“
17. KEGA 027STU-4/2017 "Tvorba tematicky zameraných laboratórnych pracovísk pre implementáciu rôznych typov vnorených platform do výučby", Riešený projekt.
18. NIL-I-007, "Podpora NO-SK spolupráce v automatickom riadení" Nórsko-slovenský fond NIL na podporu spolupráce v oblasti vzdelávania (Enhancing NO-SK Cooperation in Automatic Control, ECAC) , výskumný pobyt v roku 2010
19. EEA SK06-II-01-004, Štipendijný program EHP Slovensko, Mobilitný projekt medzi vysokými školami: Slovenská Technická Univerzita, Norges teknisk-naturvitenskapelige universitet a Universität Liechtenstein, výskumný pobyt v roku 2016
20. FP7-PEOPLE-2013-ITN, 7 th Framework Programme for Research: "Training in Embedded Predictive Control and Optimization TEMPO" (FP7-PEOPLE-2013-ITN, Proposal: 607957), spoluvedúci a mentor študenta
21. ESF-13120200115, "Doctoral students for the modern industrial automation in Slovakia" (Doktorandi pre modernú priemyselnú automatizáciu v SR), Európsky sociálny fond (ESF-13120200115) , výskumné pobyt v roku 2006, 2007 a 2008.

Podané projekty v úlohe garanta

- APVV VV, "Nelineárny odhad stavu a parametrov pre samonapájané monitorovanie stavu konštrukcií" (v recenznom konaní)
- VEGA, "Adaptívne získavanie energie z vibrácií s priebežnou identifikáciou parametrov" (v recenznom konaní)

Realizované a inžinierske diela

1. Experimentálna laboratórna zostava na riadenie a odhad magnetickej levitácie pomocou programovateľného vnoreného mikroovládača. Ďalšie informácie na webovej stránke výskumno-pedagogického projektu:
<http://www.automationshield.com>, Laboratórium L8, ÚAMAI, SjF STU, 2018.



2. Experimentálna laboratórna zostava na spätnovázobné riadenie ohrevu tlačovej hlavy pomocou programovateľného vnoreného mikroovládača. Ďalšie informácie na webovej stránke výskumno-pedagogického projektu:
<http://www.automationshield.com>, Laboratórium L8, ÚAMAI, SjF STU, 2018.



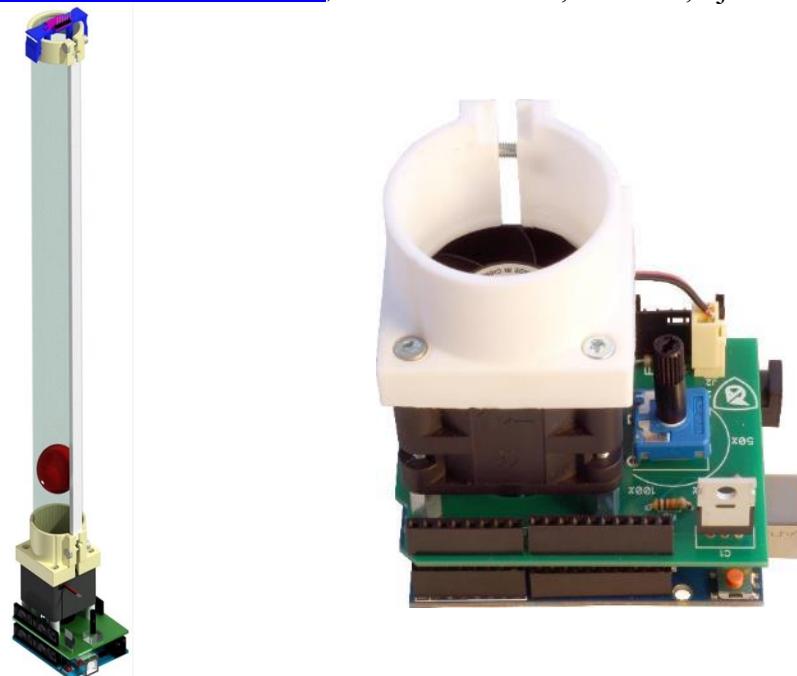
3. Experimentálna laboratórna zostava na spätnovázobné riadenie a odhad optických javov pomocou programovateľného vnoreného mikroovládača. Ďalšie informácie na webovej stránke výskumno-pedagogického projektu:
<http://www.automationshield.com>, Laboratórium L8, ÚAMAI, SjF STU, 2017-2018.



4. Experimentálna laboratórna zostava na spätnoväzobné riadenie a odhad jednosmerného motora pomocou programovateľného vnoreného mikroovládača. Ďalšie informácie na webovej stránke výskumno-pedagogického projektu:
<http://www.automationshield.com>, Laboratórium L8, ÚAMAI, SjF STU, 2017-2018.



5. Experimentálna laboratórna zostava na spätnoväzobné riadenie a odhad polohy lietajúcej guličky pomocou programovateľného vnoreného mikroovládača. Ďalšie informácie na webovej stránke výskumno-pedagogického projektu:
<http://www.automationshield.com>, Laboratórium L8, ÚAMAI, SjF STU 2018.



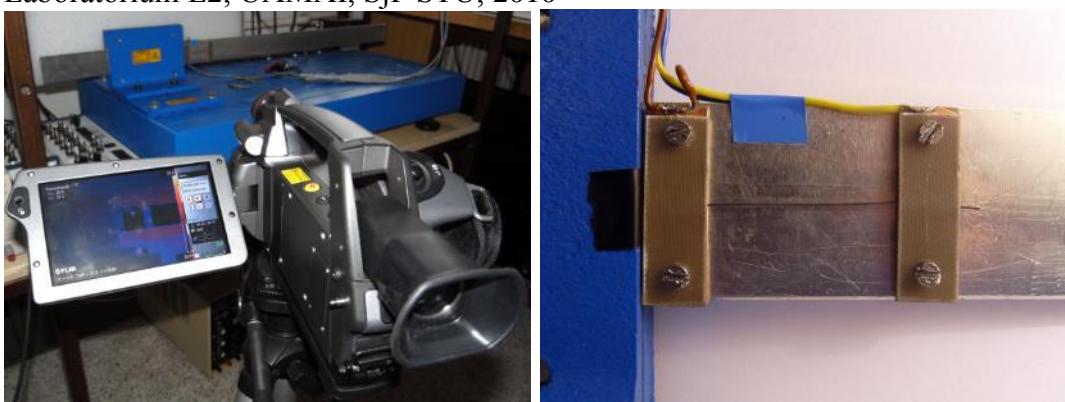
-
6. Experimentálne zariadenie na optimálne spätnovázobné riadenie pomocou programovateľného vnoreného mikroovládača s malým výkonom. Laboratórium L8, ÚAMAI, SjF STU, 2018.



7. Experimentálna laboratórna zostava na aktívne tlmenie vibrácií pomocou piezokeramických prevodníkov. Laboratórium L8, ÚAMAI, SjF STU, 2006-2014



8. Experimentálna laboratórna zostava na aktívne tlmenie vibrácií pomocou materiálov s tvarovou pamäťou, akčný člen na využitie materiálov s tvarovou pamäťou. Laboratórium L2, ÚAMAI, SjF STU, 2010



9. Experimentálna laboratórna zostava na skúmanie aktívneho znižovania hluku v klimatizačných zariadeniach. Laboratórium L2, ÚAMAI, SjF STU, 2012



10. Experimentálna laboratórna zostava na skúmanie aktívneho blokovania optického zberu audiosignálov. Laboratórium L2, ÚAMAI, SjF STU, 2012



Úžitkový vzor

TAKÁCS Gergely – ONDREJKOVIČ Karol. Spôsob detektcie úniku trosky do medzipanvy v procese kontinuálneho odlievania ocele, systém a kompaktný detektor (PUV 85-2018), Úžitkový vzor, Úrad priemyselného vlastníctva SR (ÚPV SR). Dátum podania prihlášky 11.05.2018, dátum zverejnenia prihlášky 05.11.2018, dátum zápisu a sprístupnenia úžitkového vzoru verejnosti 12.03.2019. (V konaní, zverejnená prihláška.)
<https://wbr.indprop.gov.sk/WebRegistre/UzitkovyVzor/Detail/85-2018>

Prehľad prednášok a prednáškových pobytov

Výskumné pobety v zahraničí

1. Výskumná stáž na tému efektívneho prediktívneho riadenia; Skupina pre riadenie a automatizáciu, Katedra inžinierstva, Oxfordská univerzita, Oxford, Veľká Britána (Control Group, Department of Engineering Science, University of Oxford), jesenný semester 2008, kontakt: prof. B. Kouvaritakis.
2. Výskumná stáž na tému efektívneho prediktívneho riadenia; Skupina pre riadenie a automatizáciu, Katedra inžinierstva, Oxfordská univerzita, Oxford, Veľká Britána (Control Group, Department of Engineering Science, University of Oxford), jesenný semester 2007, kontakt: prof. B. Kouvaritakis.

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3. Výskumná stáž na tému efektívneho prediktívneho riadenia; Skupina pre riadenie a automatizáciu, Katedra inžinierstva, Oxfordská univerzita, Oxford, Veľká Britána (Control Group, Department of Engineering Science, University of Oxford), jesenný semester 2006, kontakt: prof. B. Kouvaritakis.

Prednáškové pobyt v zahraničí

1. Prednáškový pobyt na tému optimálneho odhadu; Trondheim, Nórsko; Nórska univerzita vedy a techniky, Katedra inžinierskej kybernetiky, (Department of Engineering Cybernetics, Norges teknisk-naturvitenskapelige universitet, NTNU), 2016, kontakt: prof. T. A. Johansen.
2. Prednáškový pobyt na tému prediktívneho riadenia; Trondheim, Nórsko; Nórska univerzita vedy a techniky, Katedra inžinierskej kybernetiky, (Department of Engineering Cybernetics, Norges teknisk-naturvitenskapelige universitet, NTNU), 2010, kontakt: prof. T. A. Johansen.

Pozvané prednášky v zahraničí

1. Takács, Gergely - Polóni, Tomáš - Rohal'Ilkiv, Boris: Adaptive model predictive vibration control with state and parameter estimation using extended Kalman filtering. In: ICSV20 [elektronický zdroj] : Proceedings of the 20th International Congress on Sound and Vibration, Bangkok, Thailand, 7-11 July 2013. - Bangkok : International Institute of Acoustics and Vibration, 2013. - ISBN 978-616-551-682-2. - CD ROM, [8] p. (AFA)
2. Takács, Gergely - Polóni, Tomáš - Rohal'Ilkiv, Boris: Pseudo real-time state and parameter estimation of a vibrating active cantilever using the moving horizon observer. In: ICSV 21 [elektronický zdroj] : proceedings of the 21st International Congress on Sound and Vibratton. Beijing, China, 13-17 July, 20147. - Beijing : Acoustical Society of China, 2014. - ISBN 978-83-62652-66-2. - CD ROM, [8] p. (AFA)
3. Takács, Gergely - Rohal'Ilkiv, Boris: Real-time diagnostics of mechanical failure for thin active cantilever beams using low-cost hardware. In: Forum Acusticum [elektronický zdroj] : 7th Forum Acusticum. Krakow, Poland, 7-12 September 2014. - [s.l.] : European Acoustics Association, 2014. - ISSN 2221-3767. - CD ROM, [6] p (AFA)
4. Pozvaná prednáška o prediktívnom riadení; Brno, Česká republika; Vysoké učení technické v Brně, Fakulta strojního inženýrství, Ústav mechaniky těles, mechatroniky a biomechaniky, 2019, kontakt: doc. R. Grepl.
5. Pozvaná prednáška o prediktívnom riadení; Brno, Česká republika; Vysoké učení technické v Brně, Fakulta strojního inženýrství, Ústav mechaniky těles, mechatroniky a biomechaniky, 2015, kontakt: doc. R. Grepl.
6. Pozvaná prednáška o detekcii úniku trosky do medzipanvy v kontinuálnom liatí; Viedeň, Rakúsko; Technische Universität Wien, Automation and Control Institute (ACIN), 2017, kontakt: Prof. A. Kugi.
7. Pozvaná prednáška o úlohe mikroradiičov v inžinierstve; Lisabon, Portugalsko; European Federation of National Engineering Associations (FEANI), Ordem dos Engenheiros, 2015, kontakt: Prof. B. Aires.

-
8. Pozvaná prednáška o výpočtovo efektívnom prediktívnom riadení; Linz, Rakúsko; Johannes Kepler University Linz (JKU), Institute for Design and Control of Mechatronical Systems, 2009, kontakt: Prof. L. del Re

Ostatné domáce a zahraničné prednášky

Uvedené v časti "Výstupy kategórie A" a "Ostatné výstupy kategórie B alebo C" dokumentu.

Recenzie a posudky

Recenzent vedeckých publikácií pre časopisy

1. IEEE Transactions on Control Systems and Technology, vydavateľ: IEEE, karentovaný časopis, IF₂₀₁₇=4.883.
2. European Journal of Control, vydavateľ: Elsevier, karentovaný časopis, IF₂₀₁₇=2.026.
3. Journal of Systems and Control Engineering; The Proceedings of the Institution of Mechanical Engineers, Part I, vydavateľ: SAGE Publishing, karentovaný časopis, IF₂₀₁₇=0.988.
4. Mechanical Systems and Signal Processing, vydavateľ: Elsevier, karentovaný časopis, IF₂₀₁₇=4.370.
5. Mechatronics, vydavateľ: Elsevier, karentovaný časopis, IF₂₀₁₇=2.423.
6. Journal of Vibration and Control, vydavateľ: SAGE Publishing, karentovaný časopis, IF₂₀₁₇=2.197.
7. Journal of Sound and Vibration, vydavateľ: Elsevier, karentovaný časopis, IF₂₀₁₇=2.648.

Recenzent vedeckých publikácií pre konferencie a kongresy

93. IFAC WC IFAC World Congress, Organizátor: International Federation of Automatic Control (IFAC).
94. ECC European Control Conference, Organizátor: European Control Association (EUCA), IEEE Control Systems Society (CSS), Organizátor: International Federation of Automatic Control (IFAC).
95. International Conference on Advanced Intelligent Mechatronics, Organizátor: Institute of Electrical and Electronics Engineers (IEEE), American Society of Mechanical Engineers (ASME).
96. EDUCON, IEEE Global Engineering Education Conference, Organizátor: Institute of Electrical and Electronics Engineers (IEEE), IEEE Education Society.
97. Asian Control Conference (ASCC), Organizátor: International Federation of Automatic Control (IFAC), Institute of Electrical and Electronics Engineers (IEEE), IEEE Control Systems Society (CSS),
98. IEEE Sensors, Organizátor: Institute of Electrical and Electronics Engineers (IEEE).

Posudzovateľ projektov

1. Agentúra na podporu výskumu a vývoja (APVV)
2. Kultúrna a edukačná grantová agentúra MŠVVaŠ SR (KEGA)
3. Vedecká grantová agentúra MŠVVaŠ SR (VEGA)

v Bratislave, 24.04.2019

doc. Ing. Gergely Takács, PhD.

uchádzač

prof. Ing. Cyril Belavý, PhD.

Vedúci ústavu Automatizácie,
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