



Convertoare Trifazate Eficiente în Asigurarea Factorului de Putere Unitar în Aplicații Industriale

Director proiect: Șef lucr.dr.ing. Mihaela-
Codruța ANCUȚI

Obiectivul proiectului

- Realizarea unei topologii optime de convertor trifazat, care să asigure un factor de putere unitar în aplicațiile specifice sectorului industrial.

Activitățile principale

- Analiza teoretică a stadiului actual al topologiilor de convertoare trifazate ce asigură factor de putere unitar în aplicații industriale;
- Studiul teoretic prin modelare și simulare a topologiei de convertor ales;
- Proiectarea analitică a convertorului: alegere, dimensionare, verificare componente;
- Modelare / simulare / optimizare structură convertor;
- Proiectarea și achiziția plăcuțelor de circuite imprimare (PCB-uri);
- Achiziționarea componentelor / echipamentelor necesare construcției / testării convertorului;
- Realizarea practică și testarea funcțională a circuitelor electrice;
- Programarea și testarea software-ului pentru comanda tranzistoarelor;
- Testarea funcționării convertorului și încercări complete de laborator;
- Analiza comparativă a rezultatelor experimentale cu cele obținute în urma simulărilor;
- Diseminarea rezultatelor cercetării.



Rezultat

Lucrări în reviste ISI

- **Mihaela Codruta Ancuti**, Sorin Musuroi, Ciprian Sorandaru, Marian Dordescu, Geza Mihai Erdodi, *Wind turbines optimal operation at time variable wind speeds*, Applied Sciences, Special Issue "Wind Turbine Data, Analysis and Models", ISSN 2076-3417, vol. 10, issue 12, 2020, factor de impact 2.474, [doi:10.3390/app10124232](https://doi.org/10.3390/app10124232);
- **Mihaela Codruta Ancuti**, Diana Raluca Biba, Alexandru Ianovici, Ciprian Sorandaru, Sorin Musuroi, *Power Supply Platform and Functional Safety Concept Proposals for a Powertrain Transmission Electronic Control Unit*, Electronics, MDPI, vol. 9, issue 10, Special Issue "Autonomous Vehicles Technology", factor de impact 2.412, [doi:10.3390/electronics9101580](https://doi.org/10.3390/electronics9101580);
- **Mihaela Codruta Ancuti**, Sorin Musuroi, Ciprian Sorandaru, Marian Dordescu and Geza Mihai Erdodi, *Wind turbines optimum operation at variable wind speeds*, Journal of Control Engineering and Applied Informatics, acceptată, s-au cerut completări, în curs de publicare.

Open Access Article

Wind Turbines Optimal Operation at Time Variable Wind Speeds

by Mihaela-Codruta Ancuti, Sorin Musuroi, Ciprian Sorandaru, Marian Dordescu and Geza Mihai Erdodi

Appl. Sci. 2020, 10(12), 4232; <https://doi.org/10.3390/app10124232> - 20 Jun 2020
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[This article belongs to the Special Issue Wind Turbines]

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Power Supply Platform and Functional Safety Concept Proposals for a Powertrain Transmission Electronic Control Unit

by Diana Raluca Biba, Mihaela Codruta Ancuti, Alexandru Ianovici, Ciprian Sorandaru and Sorin Musuroi

Electronics 2020, 9(10), 1580; <https://doi.org/10.3390/electronics9101580> - 27 Sep 2020
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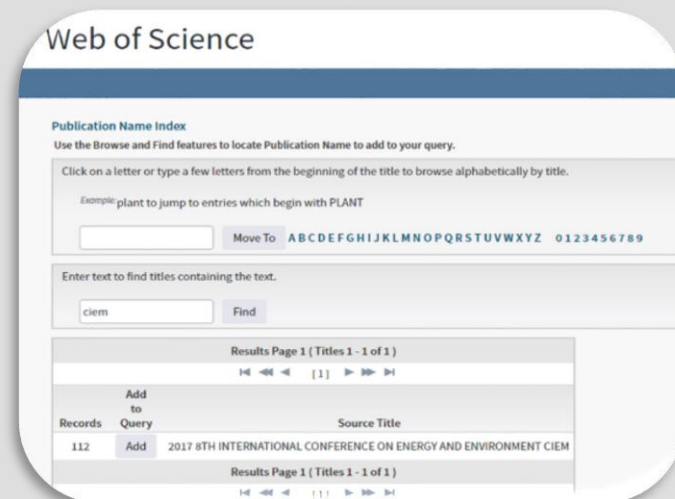
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Lucrări la conferințe ISI – set 1

- **Mihaela-Codruta Ancuti**, Sorin Musuroi, Ciprian Sorandaru, Marcus Svoboda, Vlad-Marius Voian, Valeriu-Nicola Olarescu, *Comparative analysis of interleaved Vienna three-phase power factor correction rectifier over other highly efficient topologies*, Proceedings of the 9th, IEEE International Conference on Energy and Environment (CIEM), 17-19 oct. 2019;
- Diana-Raluca Biba, Ciprian Sorandaru, **Mihaela-Codruta Ancuti**, Sorin Musuroi, *An experimental study of temperature influence for a gate driver and power MOSFETS used in a 48 V transmission control unit for a BLDC actuator control*, Proceedings of the 9th IEEE International Conference on Energy and Environment (CIEM), 17-19 oct. 2019;



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Lucrări la conferințe ISI – set 2

- Emilia Dobrin, **Mihaela-Codruta Ancuti**, Sorin Musuroi, **Ciprian Sorandaru**, Razvan Ancuti, Meda Alexandra Lazar, *Dynamics of the Wind Power Plants at small Wind Speeds*, Proceedings of the 14th IEEE International Symposium on Applied Computational Intelligence and Informatics (SACI 2020), Timisoara;
- Ciprian Carstea, Florin Butaru, **Mihaela-Codruta Ancuti**, Sorin Musuroi, Antheia Deacu, Mircea Babaita, Alin Marius Stanciu, *Wind Power Plants Operation at Variable Wind Speeds*, Proceedings of the 14th IEEE International Symposium on Applied Computational Intelligence and Informatics (SACI 2020), Timisoara;

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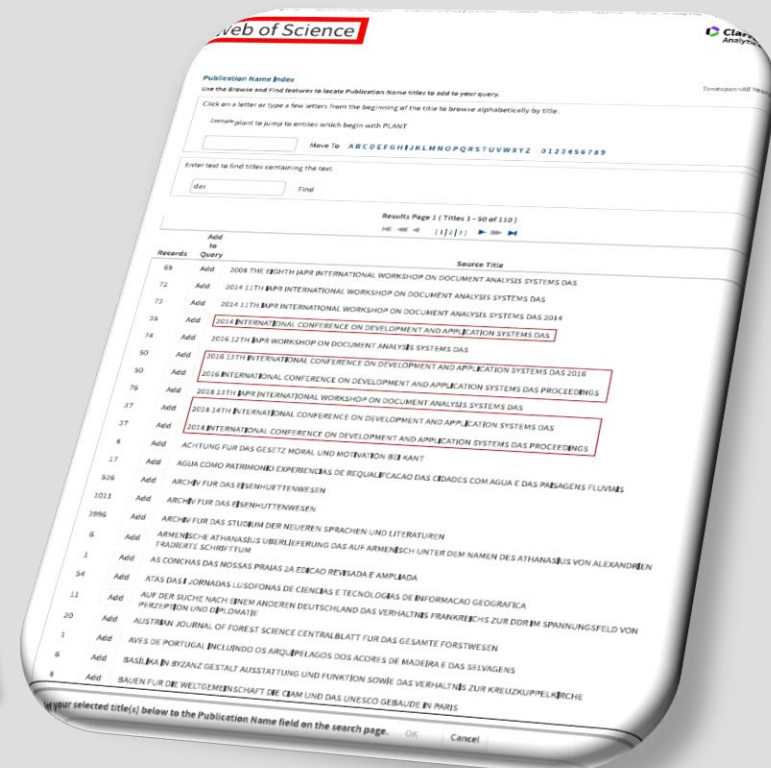
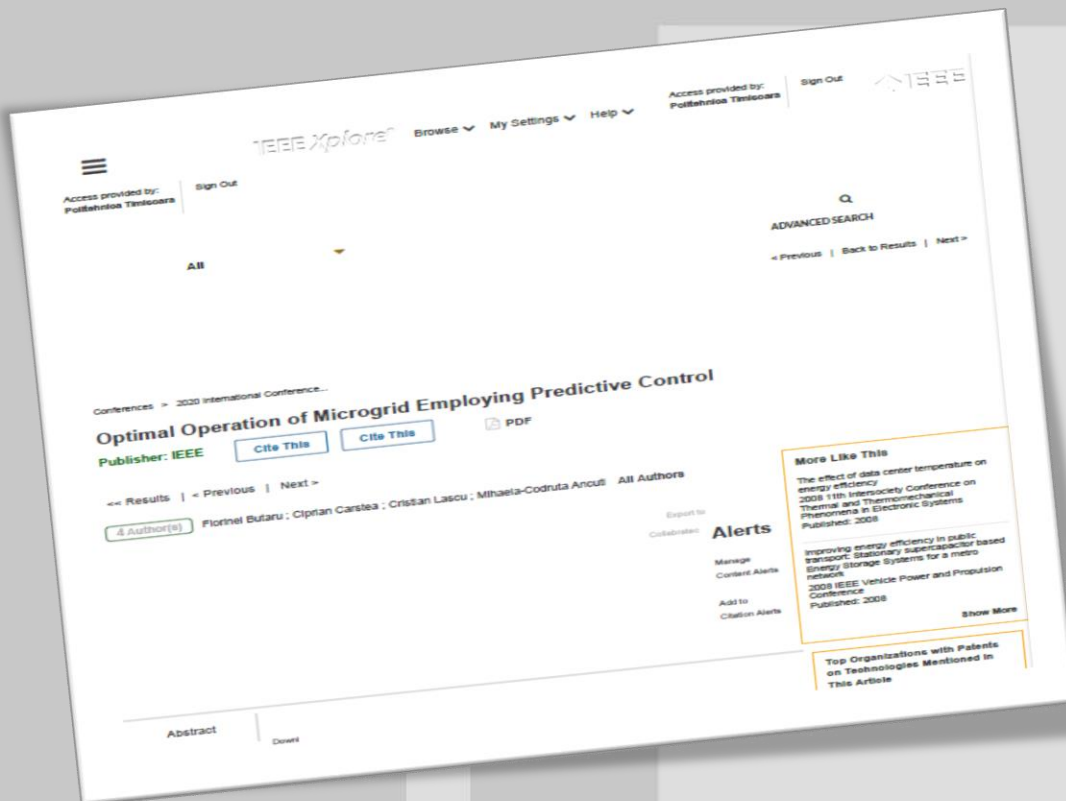
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Lucrări la conferințe ISI – set 3

- Florinel Butaru, Ciprian Carstea, Cristian Lascu, **Mihaela-Codruta Ancuti**, *Optimal operation of microgrid employing predictive control*, Proceedings of the 15th International Conference on Development and Application Systems, Suceava.



Achiziții

- kit alimentare convertizor;
- plată taxă publicare la revista MDPI Applied Sciences;
- laptop;
- imprimantă laser color;
- consumabile imprimanta laser color;
- monitor 24".

Nr.crt.	Denumire	Document justificativ Denumire/Nr/Data	UM	Cantitate	Valoare totală (lei)	Valoarea decontată din bugetul proiectului (lei)
1.	Kit alimentare convertizor	Contract nr. 20190000002450/03.10.2019	BUC	1	30,799.58	30,799.58
TOTAL Cheltuieli de capital:					30,799.58	30,799.58

Nr.crt.	Denumire	Document justificativ Denumire/Nr/Data	UM	Cantitate	Valoare totală (lei)	Valoarea decontată din bugetul proiectului (lei)
1.	Plată taxă publicare la revista MDPI Applied Sciences	Referat necesitate 1580/16.06.2020			8,245.33	8,245.33
2.	Laptop	Contract nr. 20200000001499/02.07.2020	BUC	1	2,450.00	2,450.00
3.	Imprimanta laser color	Contract nr. 20200000001500/02.07.2020	BUC	1	2,030.00	2,030.00
4.	Consumabile imprimanta laser color	Contract nr. 20200000001509/03.07.2020	BUC	1	2,375.24	2,375.24
5.	Monitor 24"	Contract nr. 20200000001510/03.07.2020	BUC	1	849.66	849.66
6.	Monitor 24"	Contract nr. 20200000001511/03.07.2020	BUC	1	849.66	849.66
TOTAL Cheltuieli privind stocurile:					16,799.89	16,799.89

* Cheltuielile cu logistica reprezintă **minim 50% din valoarea proiectului.**

Buget

Buget inițial: 47.600 RON

Cheltuieli realizate:

47,599.47 RON

Nr. Cr.	Denumire capitol buget	Total Faza 1+Faza2 PROPOS	Total Faza 1+Faza2 REALIZAT
	*Cheltuieli cu logistica din care:	33,400.00	47,599.47
1.	1.1. Cheltuieli de capital achiziții (tehnica de calcul, echipamente, dispozitive, utilaje, cu valoare mai mare de 2.500 lei), aplicații soft	2,600.00	30,799.58
	1.2. Cheltuieli privind stocurile materiale (consumabile), obiecte de inventar (bunuri cu valoare mai mică de 2.500 lei), alte cheltuieli materiale (diseminare, taxe de publicare, etc.)	30,800.00	16,799.89
2.	Cheltuieli de deplasare: în țară sau în străinătate ale membrilor echipei de cercetare în vederea participării la conferințe, manifestări științifice de prestigiu, la stagiile de documentare sau de cercetare, din domeniul proiectului (taxe de participare, transport, cazare, diurnă)	14,200.00	0
3.	TOTAL	47,600.00	47,599.47

Echipa de cercetare

Director proiect: Șef lucr.dr.ing. Mihaela-Codruța ANCUȚI

Membru: Prof.dr.ing. Sorin MUȘUROI

Membru: Conf.dr.ing. Ciprian ȘORÂNDARU

Membru: Șef lucr.dr.ing. Marcus SVOBODA

Membru: Drd.ing. Marius Vlad VOIAN

Finanțat prin

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