**AKADEMIJA TEHNIČKIH ZNANOSTI HRVATSKE**

**Odjel energijskih sustava**

**Izvješće o radu u 2021. godini**

**Prof. emer. dr. sc. Frano Barbir**

**Ko-autor članaka:**

* Poljak, I., Županović, P., Barbir, F. Ex situ measurement of charge carrier concentration in Nafion by Hall effect, Polymer Bulletin, 2021
* Xing, L., Xu, Y., Penga, F. Barbir, Shi, W., Xuan, J. A segmented fuel cell unit with functionally graded distributions of platinum loading and operating temperature, Chemical Engineering Journal 406, 126889 2021

**Predavanja/konferencije:**

* Održao pozvano predavanje pod naslovom "Often misconceptions about hydrogen's role in the new energy order" na online konferenciji First conference of European clean energy transition, 27.02.2021.
* Organizirao međunarodni Webinar Hydrogen in Energy Transition ispred Odjela za energetske sustave Hrvatske akademije tehničkih znanosti i Hrvatske udruge za vodik (05. ožujka 2021.) U okviru webinara održao predavanje pod naslovom “Opportunities for Hydrogen in Croatian energy transition”.
* Održao predavanje pod naslovom “Uloga vodika u energetskoj tranziciji” na Simpoziju o obnovljivim i nuklearnim izvorima energije, SAVED, na PMF Zagreb. 15. svibnja 2021.
* Održao predavanje pod naslovom “Vodik – ambiciozni planovi za povećanje proizvodnje iz OIE i primjena kod teških vozila” na Hibridnoj konferencija „Zelena mobilnost i energetska tranzicija“ održanoj u hotelu Westin u Zagrebu. 21. svibnja 2021.
* Održao predavanje pod naslovom “Hydrogen and Fuel Cells and their Role in New Energy Order” na stručnom proljetnom seminaru “The Energy Dilemma”, u organizaciji Studentske udruge BEST, Zagreb. 27. svibnja 2021.
* Organizirao i vodio sekciju o vodiku na 15. Međunarodnom znanstveno-stručnom savjetovanju Procesna i energetska postrojenja i 9. Forumu o obnovljivim izvorima energije, Umag 9-11 lipnja 2021, i održao uvodno predavanje pod naslovom Vodik u EU i Hrvatskoj.
* Održao predavanje pod naslovom U susret nacionalnoj strategiji za vodik na 10. konferenciji Energetska budućnost Hrvatske, u organizaciji Lidera, Zagreb 29. lipnja 2021.
* Održao predavanje “Viđenja primjene vodika u brodarstvu Hrvatske s osvrtom na smjernice i događanja u Ko-autor radova „Overview of Hydrogen Refueling Stations and Spatial Occupancy Assessment: A Preliminary Results of the Case Study in Croatia“ i „Comparison of different optimization approaches for positioning PV panels within islanded microgrid system.“ prezentiranih na konferenciji Splitech 2021, Split/Bol, 8-11 rujna 2021.
* EU i Hydrogen Europe” na stručnoj konferenciji Vodik u brodarstvu Hrvatske – Zagreb, 20. rujna. 2021.
* Organizirao i moderirao Okrugli stol “Vodik gorivo budućnosti” na 7. Kongresu Hrvatske komore inženjera strojarstva, Vodice 22-24 rujna 2021.
* Ko-autor rada “Case Study on Spatial Occupancy Assessment of Hydrogen Refueling Station in Croatia“ koji je prezentiran na Renewable Hydrogen Energy Conference (RH2EC-2021) 27-29. rujna 2021.
* Sudjelovao na Okruglom stolu Solarne tehnologije u Hrvatskoj Dani sunca, Hvar 1.10.2021.
* Održao predavanje “Vodik kao gorivo za željeznički promet” na edukativnoj radionici Hrvatskog društva željezničkih inženjera, Tuheljske toplice 16 I 17 listopad 2021.
* Održao predavanje “Hydrogen Technologies and Their Role in Decarbonization of Energy Supply” na Pugwash conference on Security Science and Peace, Zagreb, 12-13 studeni 2021.

**Članstva:**

* Predsjednik, Hrvatska udruga za vodik
* Vice-president, International Association for Hydrogen Energy
* Chairman, States Representatives Group, Fuel Cells & Hydrogen Joint Undertaking
* Član upravnog odbora Hrvatskog pagvaškog društva, ogranka Pugwash Conferences on Science and World Affairs

**Nagrade i priznanja:**

* Dobitnik Državne nagrade za znanost za životno djelo za tehničke znanosti

**Prof. dr. sc. Neven Duić**

**Članstva:**

* Energy steering panel (EASAC) – dopredsjednik

**Znanstveni časopisi:**

* Senior urednik časopisa e-Prime
* Suradnik urednika časopisa Energy Storage and Saving (Associate Editor)

**Konferencije:**

* Predsjednik Lokalnog organizacijskog odbora 16. SDEWES konferencije Dubrovnik 2021.
* Član Odbora za posebne sekcije 16. SDEWES konferencije Dubrovnik 2021.
* Član Odbora za organizaciju pozivnih predavanja i panela16. SDEWES konferencije Dubrovnik 2021.
* Predsjednik Odbora za posebna izdanja časopisa16. SDEWES konferencije Dubrovnik 2021.

**Nagrade i priznanja:**

* Medalja Anastazije Stojković, Društvo termičara Srbije

**Znanstveni radovi:**

1. Novosel, Tomislav; Grozdek, Marino; Domac, Julije; Duić, Neven, [Spatial assessment of cooling demand and district cooling potential utilizing public data](https://www.bib.irb.hr/1148341) // Sustainable Cities and Society, **75** (2021), 103409  [IF 7.587, Q1, 0 cit]
2. Lovrak, Ana; Pukšec, Tomislav; Grozdek, Marino; Duić, Neven; [An integrated Geographical Information System (GIS) approach for assessing seasonal variation and spatial distribution of biogas potential from industrial residues and by-products](https://www.bib.irb.hr/1147160) // Energy (Oxford), **239** (2021), 122016  [IF 7.147, Q1, 0 cit]
3. Meha, Drilon; Pfeifer, Antun; Sahiti, Naser; Schneider, Daniel Rolph; Duić, Neven, [Sustainable transition pathways with high penetration of variable renewable energy in the coal-based energy systems](https://www.bib.irb.hr/1146917) // Applied energy, **304** (2021), 117865  [IF 9.746, Q1, 0 cit]
4. Bedoić, Robert; Smoljanić, Goran; Pukšec, Tomislav; Čuček, Lidija; Ljubas, Davor; Duić, Neven, [Geospatial Analysis and Environmental Impact Assessment of a Holistic and Interdisciplinary Approach to the Biogas Sector](https://www.bib.irb.hr/1140826) // Energies, **14** (2021), 17; 5374, 21 [IF 3.004, Q1, 0 cit]
5. Hrnčić, Boris; Pfeifer, Antun; Jurić, Filip; Duić, Neven; Ivanović, Vladan; Vušanović, Igor, [Different investment dynamics in energy transition towards a 100% renewable energy system](https://www.bib.irb.hr/1139170) // Energy (Oxford), **237** (2021), 121526, 11  [IF 7.147, Q1, 0 cit]
6. Stančin, Hrvoje; Mikulčić, Hrvoje; Manić, Nebojša; Stojiljiković, Dragoslava; Vujanović, Milan; Wang, Xuebin; Duić, Neven, [Thermogravimetric and kinetic analysis of biomass and polyurethane foam mixtures Co-Pyrolysis](https://www.bib.irb.hr/1139171) // Energy (Oxford), **237** (2021), 121592  [IF 7.147, Q1, 0 cit]
7. Pfeifer, Antun; Herc, Luka; Batas Bjelić, Ilija; Duić, Neven, [Flexibility index and decreasing the costs in energy systems with high share of renewable energy](https://www.bib.irb.hr/1127470) // Energy conversion and management, **240** (2021), 114258, 18  [IF 9.709, Q1, 1 cit]
8. Meha, Drilon; Dragusha, Bedri; Thakur, Jagruti; Novosel, Tomislav; Duić, Neven, [A novel spatial based approach for estimation of space heating demand saving potential and CO2 emissions reduction in urban areas](https://www.bib.irb.hr/1122147) // Energy (Oxford), **225** (2021), 120251, 15  [IF 7.147, Q1, 0 cit]
9. Bedoić, Robert; Dorotić, Hrvoje; Schneider, Daniel Rolph; Čuček, Lidija; Ćosić, Boris; Pukšec, Tomislav; Duić, Neven, [Synergy between feedstock gate fee and power-to- gas: An energy and economic analysis of renewable methane production in a biogas plant](https://www.bib.irb.hr/1120686) // Renewable Energy, **173** (2021), 12-23  [IF 6.274, Q1, 1 cit]
10. Doračić, Borna; Pavičević, Matija; Pukšec, Tomislav; Quoilin, Sylvain; Duić, Neven, [Utilizing excess heat through a wholesale day ahead heat market – The DARKO model](https://www.bib.irb.hr/1118043) // Energy conversion and management, **235** (2021), 114025, 15  [IF 9.709, Q1, 0 cit]
11. Meha, Drilon; Thakur, Jagruti; Novosel, Tomislav; Pukšec, Tomislav; Duić, Neven, [A novel spatial–temporal space heating and hot water demand method for expansion analysis of district heating systems](https://www.bib.irb.hr/1118344) // Energy conversion and management, **234** (2021), 113986, 15  [IF 9.709, Q1, 0 cit]
12. Calise, Francesco; Duić, Neven; Pfeifer, Antun; Vicidomini, Maria; Orlando, Alessandra Maria, [Moving the system boundaries in decarbonization of large islands](https://www.bib.irb.hr/1114570) // Energy conversion and management, **234** (2021), 113956, 12  [IF 9.709, Q1, 2 cit]
13. Dorotić, Hrvoje; Pukšec, Tomislav; Schneider, Rolph Daniel; Duić, Neven, [Evaluation of district heating with regard to individual systems – Importance of carbon and cost allocation in cogeneration units](https://www.bib.irb.hr/1108333) // Energy (Oxford), **221** (2021), 119905, 21  [IF 7.147, Q1, 1 cit]
14. Brigagão, George Victor; de Medeiros, José Luiz; Araújo, Ofélia de Queiroz F.; Mikulčić, Hrvoje; Duić, Neven, [A zero-emission sustainable landfill-gas-to-wire oxyfuel process: Bioenergy with carbon capture and sequestration](https://www.bib.irb.hr/1101342) // Renewable & sustainable energy reviews, **138** (2021), 110686, 13  [IF 14.982, Q1, 1 cit]
15. Ren, Hui; Zhang, Aiwei; Wang, Fei; Yan, Xihui; Li, Yu; Duić, Neven; Shafie-khah, Miadreza; Catalão, João P.S. [Optimal scheduling of an EV aggregator for demand response considering triple level benefits of three-parties](https://www.bib.irb.hr/1104449) // International journal of electrical power & energy systems, **125** (2021), 106447 [IF 4.630, Q1, 5 cit]
16. Gjorgievski, Vladimir Z.; Markovska, Natasa; Abazic, Alajdin; Duić, Neven, [The potential of power-to-heat demand response to improve the flexibility of the energy system: An empirical review](https://www.bib.irb.hr/1091564) // Renewable & sustainable energy reviews, **138** (2021), 110489  [IF 14.982, Q1, 6 cit]
17. Tan, Houzhang; Cao, Ruijie; Wang, Shunsen; Wang, Yibin; Deng, Shuanghui; Duić, Neven, [Proposal and techno-economic analysis of a novel system for waste heat recovery and water saving in coal-fired power plants: A case study](https://www.bib.irb.hr/1085463) // Journal of cleaner production, **281**(2021), 124372 [IF 9.297, Q1, 5 cit]
18. Groppi, Daniele; Pfeifer, Antun; Garcia, Davide Astiaso; Krajačić, Goran, Duić, Neven, [A review on energy storage and demand side management solutions in smart energy islands](https://www.bib.irb.hr/1079810) // Renewable & sustainable energy reviews, **135**110083 (2021) [IF 14.982, Q1, 12 cit]
19. Stančin, Hrvoje; Šafář, Michal; Růžičková, Jana; Mikulčić, Hrvoje; Raclavská, Helena; Wang, Xuebi; Duić, Neven, [Co-pyrolysis and synergistic effect analysis of biomass sawdust and polystyrene mixtures for production of high-quality bio-oils](https://www.bib.irb.hr/1075653%22%20%5Ct%20%22_blank) // Process safety and environmental protection, **145**, 1-11 (2021)   [IF 6.158, Q1, 9 cit]
20. Herc Luka, Pfeifer Antun, Feijoo Felipe, Duić Neven, [Energy system transitions pathways with the new H2RES model: A comparison with existing planning tool](https://www.bib.irb.hr/1163708) // e-Prime - Advances in Electrical Engineering, Electronics and Energy, **1** (2021), 100024
21. Seixasa, Júlia; Østergaardb, Poul Alberg; Johannsenb, Rasmus Magni; Duic, Neven, [Energy Transition and Sustainability](https://www.bib.irb.hr/1151269) // International Journal of Sustainable Energy Planning and Management, **32** (2021), 1-4
22. Kılkış, Şiir; Krajačić, Goran; Duić, Neven; Rosen, Marc A.; Al-Nimr, Moh'd Ahmad, [Accelerating mitigation of climate change with sustainable development of energy, water and environment systems](https://www.bib.irb.hr/1142328) // Energy conversion and management, **245** (2021), 114606, 3
23. Trafczyński, Marian; Urbaniec, Krzysztof; Mikulčić, Hrvoje; Duić, Neven, [A preface to the special issue of optimization and engineering dedicated to SDEWES 2020 conferences](https://www.bib.irb.hr/1139238) // Optimization and engineering, **22** (2021), 1681-1692
24. Østergaard, Poul Alberg; Duić, Neven; Noorollahi, Younes; Kalogirou, Soteris A., [Recent advances in renewable energy technology for the energy transition](https://www.bib.irb.hr/1139176) // Renewable energy, **179** (2021), 877-884
25. Wołosz, Krzysztof J.; Urbaniec, Krzysztof; Duić, Neven, [Sustainable Development of Energy, Water and Environment Systems (SDEWES)](https://www.bib.irb.hr/1124859) // Sustainability, **13** (2021), 9; 4939
26. Gjorgievski, Vladimir Z.; Markovska, Natasa; Pukšec, Tomislav; Duić, Neven; Foley, Aoife, [Supporting the 2030 agenda for sustainable development: Special issue dedicated to the conference on sustainable development of energy, water and environment systems 2019](https://www.bib.irb.hr/1120395) // Renewable and Sustainable Energy Reviews, **143** (2021), 110920
27. Xuexiu, Jia; Duić, Neven, [Advanced methods and technologies towards environmental sustainability](https://www.bib.irb.hr/1110077) // Clean technologies and environmental policy **23,**709–710 (2021)
28. Seixasa, Júlia; Østergaardb, Poul Alberg; Johannsenb, Rasmus Magni; Duic, Neven, [Energy Transition and Sustainability](https://www.bib.irb.hr/1151269) // International Journal of Sustainable Energy Planning and Management, **32** (2021), 1-4
29. Kılkış, Şiir; Krajačić, Goran; Duić, Neven; Rosen, Marc A.; Al-Nimr, Moh'd Ahmad, [Accelerating mitigation of climate change with sustainable development of energy, water and environment systems](https://www.bib.irb.hr/1142328) // Energy conversion and management, **245** (2021), 114606, 3
30. Trafczyński, Marian; Urbaniec, Krzysztof; Mikulčić, Hrvoje; Duić, Neven, [A preface to the special issue of optimization and engineering dedicated to SDEWES 2020 conferences](https://www.bib.irb.hr/1139238) // Optimization and engineering, **22** (2021), 1681-1692
31. Østergaard, Poul Alberg; Duić, Neven; Noorollahi, Younes; Kalogirou, Soteris A., [Recent advances in renewable energy technology for the energy transition](https://www.bib.irb.hr/1139176) // Renewable energy, **179** (2021), 877-884
32. Wołosz, Krzysztof J.; Urbaniec, Krzysztof; Duić, Neven, [Sustainable Development of Energy, Water and Environment Systems (SDEWES)](https://www.bib.irb.hr/1124859) // Sustainability, **13** (2021), 9; 4939
33. Gjorgievski, Vladimir Z.; Markovska, Natasa; Pukšec, Tomislav; Duić, Neven; Foley, Aoife, [Supporting the 2030 agenda for sustainable development: Special issue dedicated to the conference on sustainable development of energy, water and environment systems 2019](https://www.bib.irb.hr/1120395) // Renewable and Sustainable Energy Reviews, **143** (2021), 110920
34. Xuexiu, Jia; Duić, Neven, [Advanced methods and technologies towards environmental sustainability](https://www.bib.irb.hr/1110077) // Clean technologies and environmental policy **23,**709–710 (2021)
35. Mikulčić, Hrvoje; Perković, Luka; Duić, Neven, [A preface to the special issue of optimization and engineering dedicated to SDEWES 2019 conference](https://www.bib.irb.hr/1101401?rad=1101401) // Optimization and engineering, **22** (2021)
36. Nielsen, Tore Bach; Lund, Henrik; Østergaard, Poul Alberg; Duić, Neven; Vad Mathiesen, Brian, [Perspectives on Energy Efficiency and Smart Energy Systems from the 5th SESAAU2019 conference](https://www.bib.irb.hr/1091566) // Energy, **216**, 119260  (2021)
37. Mikulčić, Hrvoje; Baleta, Jakov; Wanga, Xuebin; Duić, Neven; Dewil, Raf, [Green development challenges within the environmental management framework](https://www.bib.irb.hr/1087267) // Journal of Environmental Management, **277**, 111477 (2021)
38. de Blas Sanz, Ignacio; Capellán-Pérez, Iñigo; Álvarez Antelo, David; Miguel, Luis Javier; Crespo, Yania; Samsó, Roger; Martín, Eneko; Neumann, Marc; Markovska, Natasa; Duic, Neven; Arto, Iñaki; Kratena, Kurt; Tomás, Manuel; Rueda, Mikel; Llases, Luis; Parrado, Gonzalo; Cieplinski, André; Calheiros, Tomás; Ramos, Iván; Ferreras, Noelia; Mediavilla, Margarita; Distefano, Tiziano; Eggler, Lukas; Van Allen, Ole; Sverdrup, Harald, [Interim synthesis of the model, selected results and scenario analysis, D9.2 Interim synthesis of the model, selected results and scenario analysis (LOCOMOTION)](https://www.bib.irb.hr/1164162) (2021)
39. Markovska, Natasa; Capellán-Pérez, Inigo; Gusheva, Ema; Duic, Neven; Wergles, Nathalie; Distefano, Tiziano, [Review of storylines applied in global environmental assessments, Deliverable D8.3, Horizon 2020 project "Low-carbon society: an enhanced modelling tool for the transition to sustainability (LOCOMOTION)"](https://www.bib.irb.hr/1150310) (2021)

**Prof. dr. sc. Zvonimir Guzović**

1. **rad u časopisu:**

     1.1) Mario Kun, Zvonimir Guzović, Predrag Rašković, I[nnovative small axial multistage turbine with partial admission for bottoming ORC](https://www.bib.irb.hr/1165133) *// Energy Reports,* **7** (2021), 9069-9093, doi:10.1016/j.egyr.2021.11.229

1. **učešće na konferenciji - radovi:**

     2.1) Zvonimir Guzović , Marina Barbarić, Predrag Rašković, Challenges of Heat Pipes Application for Sustainable Development of Energy Systems, 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia.

     2.2)  Zvonimir Guzović, Zlatko Bačelić Medić, Marina Barbarić, A New Numerical Tool for the Techno-Economic Analysis of Small Hydropower Plants, 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia.

       2.3) Zvonimir Guzović, Zlatko Bačelić Medić, Mario Klun, Effect of Working Fluid on Characteristics of Organic Rankine Cycle with Medium Temperature Geothermal Water, 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia.

        2.4)  Zvonimir Guzović, Igor Stankovski, Marina Barbarić, Small Hydropower for Sustainable Development, 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia.

        2.5) Perica Jukić, Zvonimir Guzović, Study and Analysis the Performance of an Integrated Solar Combined Cycle Power Plant, 1st Renewable Hydrogen Energy Conference RH2EC-2021, Opatija, Croatia, 27-29.09.2021.

        **3. članstva:**

        3.1. aktivni član New York Academy of Sciences;

        3.2. član ISC-a 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia

         3.3. sekretar 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia

         3.4. član LOC-a 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, Dubrovnik, Croatia

**Prof. dr. sc. Igor Kuzle**

16.12.2021. dobio Godišnju nagradu „Rikard Podhorsky“ Akademije tehničkih znanosti Hrvatske za 2020. godinu za značajan i prepoznatljiv doprinos u razvoju i primjeni naprednih elektroenergetskih mreža.

Objavio je članak u godišnjaku Akademije tehničkih znanosti Hrvatske:

* *Rafaela Beus, Anthea Štor, Kuzle, Igor, Marko Bišćan, Blaženka Brkljač. KONPRO 2 – Razvoj nove generacije uređaja numeričke zaštite, Godišnjak 2020. Akademije tehničkih znanosti Hrvatske, HATZ, Zagreb, 2021.*

Kao pozvani predavač sudjelovao je na 29th Mediterranean Conference on Control and Automation (MED 2021), Bari, Italy, 22-25 June 2021 <http://med2021.poliba.it>

* *Kuzle, Igor. Virtual storage plants test bed*

Kao pozvani predavač sudjelovao je na skupu IEEE PES Day 2021: Clean Energy, 19th May 2021, u organizaciji IEEE UKM Student Branch Malaysia <https://www.facebook.com/IEEEUKMSB/>

* *Kuzle, Igor. System Frequency Control of Future Power Systems, online webinar*

Sudjelovao je na dva IEEE PES Governing Bord meeting, gdje je izabran za člana Upravnog odbora na mandat od 5 godina (2021.-2026.)

**Prof. dr. sc. Iva Ridjan Skov**

**Predavanja:**

1. Pozvano predavanje ”Od vjetra do tekucih i plinovitih goriva buducnosti” i okrugli stol ”Vodik – gorivo buducnosti” na 7. međunarodnom kongresu Dani inženjera strojarstva 22-24.09.2021 u Vodicama
2. Pozvano predavanje „Future Energy Systems“, The National Climate Summit 2021, Lemvig, Danska 18.08.2021 <https://klimatorium.dk/wp-content/uploads/2021/08/Klimatopmoede_Forpersoner-1.pdf>
3. Pozvano predavanje “Power-to-X as sector integration enabler” na LIFE ClimatePath2050 International Conference: Designing Pathways toward Climate Neutrality 6-7.10.2021 <https://podnebnapot2050.si/conference-programme/?lang=en>
4. Pozvano stručno predavanje (sat sa znanstvenicima, Altinget, Kopenhagen) – Aktualni PtX projekti, 27.05.2021

**Konferencije:**

Scientific Advisery Board 16th Conference on Sustainable Development of Energy, Water and Environment Systems, October 10 -15, 2021 Dubrovnik, Croatia

**Znanstveni časopisi:**

članica uredništva (Section Editor, [Energy and Environment Section](https://www.mdpi.com/journal/energies/sectioneditors/energy_environment)) časopisa Energies

**Znanstveni članci:**

1. Skov, I. R., Schneider, N. C. A., Schweiger, G., Schöggl, J-P., & Posch, A. (2021). Power-to-X in Denmark: An Analysis of Strengths, Weaknesses, Opportunities and Threats. *Energies*, *14*(4), [913]. [https://doi.org/10.3390/en14040913](https://doi.org/10.3390/en14040913%22%20%5Ct%20%22_blank)
2. Korberg, A. D., Mathiesen, B. V., Skov, I. R., & Clausen, L. (2021). The role of biomass gasification in low-carbon energy and transport systems. *Smart Energy*. <https://doi.org/10.1016/j.segy.2021.100006>
3. Korberg, A. D., Brynolf, S., Grahn, M., & Skov, I. R. (2021). Techno-economic assessment of advanced fuels and propulsion systems in future fossil-free ships. *Renewable and Sustainable Energy Reviews*, *142*. <https://doi.org/10.1016/j.rser.2021.110861>
4. Lund, H., Thellufsen, J. Z., Østergaard, P. A., Sorknæs, P., Skov, I. R., & Mathiesen, B. V. (2021). EnergyPLAN – Advanced Analysis of Smart Energy Systems. *Smart Energy*. <https://doi.org/10.1016/j.segy.2021.100007>
5. Ko-autorica clanka prezentiranog na 16th Conference on Sustainable Development of Energy, Water and Environment Systems: Skov, I.R., Schneider,N., Mathiesen, B.V. , Korberg, A.D., Incentive structures for Power-to-X and e-fuel pathways for transport in EU and Member states

**Prof. dr. sc. Zdenko Šimić**

**Technical program committee chair**

58th ESReDA Seminar - Using Knowledge to Manage Risks and Threats: Practices and Challenges, 15-16 June, 2021. Online Seminar.

**Ko-editor:**

Using Knowledge to Manage Risks and Threats: Practices and Challenges - Proceedings of the 58th ESReDA Seminar, Simic, Z., Simola, K., Tulonen, T. and Marsden, E. (Editors), EU, Luxembourg, 2021, ISBN 978-92-76-42383-6, doi:10.2760/443612, JRC126686.<https://publications.jrc.ec.europa.eu/repository/handle/JRC126686>

**Ko-autor izvještaja:**

* A.B. Avila, M.P. Veira. and Z. Simic, Operating Experience with Containment Buildings at Nuclear Power Plants, EUR 30764 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-40145-2, doi:10.2760/161133, JRC125565.
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**Sudjelovao kao skupu IAEA:**

Consultancy Meeting on Key Performance Indicators to Support Nuclear Knowledge Management Programmes, IAEA, Online, Austria, 13-16 April 2021

**Prof. dr. sc. Željko Tomšić**

**Članstva:**

* Predstavnik Republike Hrvatske u sastavnici programskog odbora za Okvirni program za istraživanje i inovacije- Obzor Europa i Program za istraživanje i osposobljavanje Europske zajednice za atomsku energiju za razdoblje 2021.-2025. kojim se nadopunjuje Obzor Europa- Okvirni program za istraživanja i inovacije. Sastavnica programskog odbora „Klima, energija i mobilnost“ (uključujući povezane misije i partnerstva), Ministarstvo znanosti i obrazovanja
* Predstavnik Republike Hrvatske u prijelazne tematske konfiguracije za Okvirni program Europske unije za istraživanje i inovacije, Klima, energija i mobilnost (engl. Climate, Energy and Mobility) za razdoblje 2021.-2027.unije za istraživanja i inovacije za razdoblje 2021.-2027. (Obzor Europa), Ministarstvo znanosti i obrazovanja

**Projekti:**

* Lead Project Coordinators (LPC), The Role of SMRs in a Low Carbon Future-A cross country analyses for countries in Europe and Central Asia, 2020-2021., International Atomic Energy Agency – IAEA, Vienna
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**Sudjelovanje na znanstvenom projektu:**

* Voditelj projekta Prof. dr. sc. Nenad Debrecin, STRIDE - Improved energy planning through the Integration of Smart Grid concepts in the Danube Region, EU Interreg – Danube Transnational Programme, 1.7.2020. – 31.12.2022.
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* Voditelj projekta Izv. prof. dr. sc. Hrvoje Pandžić, Fleksibilnost mikromreža s visokim udjelom pretvarača - FLEXIBASE, 01/10/2019 - 31/05/2023, HRZZ,
* Voditelj projekta [Doc.dr.sc](http://doc.dr.sc/). Tomislav Capuder: “Punionica električnih vozila s integriranim baterijskim spremnikom”, poziv „Povećanje razvoja novih proizvoda i usluga koji proizlaze iz aktivnosti istraživanja i razvoja - faza II" (referentna oznaka: KK.01.2.1.02.), HAMAG-BICRO, 2020-2024
* Voditelj projekta Jan Okko Ziegler**, (**Enel Group, Italy): European Technology and Innovation Platform Smart Networks for Energy Transition (ETIP SNET), WG1-Reliable, economic and efficient smart grid system, 2019-2024., EU HORIZON2020
* Voditelj projekta Izv. prof. dr. sc. Hrvoje Pandžić: Aktivno sudjelovanje skupine kućanstava u energetskim tržištima (ANIMATION), 01.01.2020 - 31.12.2023, HRZZ

**Javna predavanja:**

* Tomšić, Željko: Possible role of SMR cogeneration in zero carbon strategy – case study Croatia, Regional Meeting on the Role of SMRs in Future Energy Markets: The Business Case, 15 - 19 February 2021 – Virtual Event
* Tomšić, Željko: Partnerships in NPP development and deployment - Experience from sharing of the Krško NPP between Croatia and Slovenia, 18th INPRO Dialogue Forum on Partnerships for Nuclear Development and Deployment, virtually via Cisco WebEx from 18 to 21 May 2021
* Tomšić, Željko: Project for Member States from Europe region - TC Project RER2017: The Role of SMRs in a Low Carbon Future, Virtual Regional Training Course on Energy Technology Assessments for Energy & Climate Strategies, TC Project RER2017 Assessing the Role of Low Carbon Energy Technologies for Climate Change Mitigation, 15 to 26 March 2021 – Virtual Event

**Nagrade i priznanja:**

Godišnja nagrada “Hrvoje Požar” za značajnu stručnu i znanstvenu djelatnost u razvitku energetike, Hrvatsko energetsko društvo, Zaklada “Hrvoje Požar”, 2021.

**Prof. dr. sc. Alfredo Višković**

**Međunarodne konferencije:**

* Višković, A., Franki, V., 2021. Value co-creation through a digital platform business model in the power sector. 2021 44th International Convention on Information, Communication and Electronic Technology, MIPRO 2021 - Proceedings 2021, 544–550
* Višković, A., Franki, V., Damiano., A. 2021. Integrated Strategic Action for Facilitating the Electrification Process. 2021 44th International Convention on Information, Communication and Electronic Technology, MIPRO 2021 - Proceedings 2021, 551-557
* Šimunić, D., Višković, A., Žubrinić, D., 2021. Creativity and Innovation Processes in Complex Sustainable City Environments: „Smart Creative City” Concept. 2021 44th International Convention on Information, Communication and Electronic Technology, MIPRO 2021 - Proceedings 2021, 539-543

**U časopisima:**

* Franki, V., Višković, A., 2021. Multi-criteria decision support: A case study of Southeast Europe power systems. Utilities policy 73, 101286
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* A Višković, V Franki, V Valentić, 2021. Dynamic Stability Enhancement Through the Application of Stabilizers of Electromechanical Oscillations. Journal of Energy: Energija 70 (1)

**Udžbenik:**

* Alfredo Višković, Aspekti liberalizacije električnog sustava za energiju, Sveučiište u Rijeci

**Novo članstvo:**

**Centro della Pace e della Sostenibilità Climatica, Ambientale ed Energetica –** CPSCAE

Sjedište: Roma, Bari…..

Alfredo Višković - potpredsjednik CPSCAE; potpredsjednik Znanstveno tehničkog komiteta-CTS

**Spin off:**

JUSC platform (from energy to multy level strategy)