

A list of peer-reviewed publications of Asst. Prof. Dr. Alexey Cherevan

* indicates me as a corresponding author

#	Peer-Reviewed Publication
61.	S.Kashiwaya, S. Myakala, S. Nekita, Y. Tsuji, Y. Niu, X. Liu, L. Qin, M. Sharma, A. Zakharov, L. Hultman, D. Eder, H. Saito, A. Cherevan , J. Rosen "Facet-Selective Electrostatic Assembling of 2D Mxene onto Anisotropic Single-Crystal Metal Oxides for Enhanced Photocatalysis" Advanced Materials 2026 , just accepted DOI: 10.1002/adma.202519087
60.	S. Myakala, A. Cherevan* "Atomically Precise Cluster Cocatalysts: Missing Link toward Heterogenized Photocatalytic Systems" ACS Nano 2026 , 20, 1, 99-118 DOI: 10.1021/acsnano.5c15286
59.	M. Weisweiller, A. Ertl, C. Baeckmann, A. Sihag, C. Pichler, F. Kleitz, D. Eder, A. Cherevan* "Photocatalytic upcycling of PET into methane, hydrogen and high-value liquid products" Green Chemistry 2026 , 28, 309-317 DOI: 10.1039/D5GC03562G
58.	M. Hazra, M. Hofer, B. Fickl, A. Ertl, S. Myakala, D. Eder, S. Porcu, A. Cherevan , B. Bayer, P. Ricci "2D-2D PhCN/WS ₂ exfoliated nanosheets for visible-light hydrogen production: A platinum-free co-catalyst approach" Carbon 2025 , 244, 120678 DOI: 10.1016/j.carbon.2025.120678
57.	M. Sigl, M. Egger, D. Knez, S. Myakala, C. Marshall, J. Kaye, A. Salehi-Reyhani, H. Amenitsch, A. Cherevan , D. Eder, G. Trimmel, S. Haque, T. Rath "Phase formation and photocatalytic properties of chalcostibite and tetrahedrite thin films derived from copper and antimony xanthates" Materials Advances 2025 , 6, 3985-3997 DOI: 10.1039/D5MA00212E
56.	D. Garstenauer, S. Myakala, P. Ayala, H. Rabl-Wolff, O. Zobač, F. Jirsa, D. Eder, A. Cherevan* , K. Richter "Engineering active intermetallic Pt–Zn sites via vapour–solid synthesis for photocatalytic hydrogen production" Sustainable Energy Fuels 2025 , 9, 3283-3292 DOI: 10.1039/D5SE00487J
55.	S. Belda-Marco, P. Ayala, S. Myakala, D. Eder, M. Lillo-Ródenas, A. Cherevan* , M. Román-Martínez "Production of H ₂ and organic acids by cellulose photo-reforming with TiO ₂ -bimetallic(CuNi) co-catalysts: Metal loading and photodeposition sequence effects" Environmental Research 2025 , 271, 121141 DOI: 10.1016/j.envres.2025.121141
54.	M. Hazra, S. Porcu, S. Myakala, H. Rabl, D. Eder, A. Cherevan* , P. Ricci "Elucidation of a Core–Shell Structure in Phenyl-Grafted CarbonNitride/TiO ₂ Nanohybrids for Visible-Light-Mediated H ₂ Production with Simultaneous Rhodamine B Degradation" ACS Applied Nano Materials 2025 , 8, 4, 1683-1699 DOI: 10.1021/acsanm.4c05592
53.	S. Batool, M. Ibrahim, F. Ehrlich-Sommer, S. Myakala, S. Naghdi, A. Cherevan "Enhanced photocatalytic hydrogen production efficiency using urea-derived carbon nitride in a continuous flow reactor" Sustainable Energy & Fuels , 2025 , 9, 555 DOI: 10.1039/D4SE01239A
52.	S. Chandrappa, S. Krishnan, S. Myakala, S. Perumbilavil, S. Sandeep, M. Matham, D. Eder, A. Cherevan , D. Murthy "Oxygen Vacancies and Ti ³⁺ In-Gap Defects Dictate Photocatalytic H ₂ Generation in BaTiO ₃ "

	ACS Applied Energy Materials 2024 , 7, 23, 11076-11085 DOI: 10.1021/acsaem.4c02142
51.	L. Eisele, B. Hulaj, M. Podsednik, F. Laudani, P. Ayala, A. Cherevan , A. Foelske, A. Limbeck, D. Eder and K. Bica-Schröder “ <i>Polymerized ionic liquid Co-catalysts driving photocatalytic CO₂ transformation</i> ” RSC Sustainability 2024 , 2, 2524-2531 DOI: 10.1039/D4SU00194J
50.	S. Myakala, M. Ladisich, P. Ayala, H. Rabl, S. Batool, M. Elsaesser, A. Cherevan* and D. Eder “ <i>Harnessing a Ti-based MOF for selective adsorption and visible-light-driven water remediation</i> ” Journal of Materials Chemistry 2024 , 12, 19924-19934 DOI: 10.1039/D4TA01967A Selected for the back cover and is a part of the Emerging Investigators 2024 collection
49.	S. Myakala, H. Rabl, J. Schubert, S. Batool, P. Ayala, D. Apaydin, A. Cherevan* and D. Eder “ <i>MOCHAs: An Emerging Class of Materials for Photocatalytic H₂ Production</i> ” Small 2024 , 20, 2400348 DOI: 10.1002/smll.202400348
48.	A. Ebrahimi, L. Krivosudský, A. Cherevan* and D. Eder “ <i>Polyoxometalate-based porphyrinic metal-organic frameworks as heterogeneous catalysts</i> ” Coordination Chemistry Reviews 2024 , 508, 215764 DOI: 10.1016/j.ccr.2024.215764
47.	S. Batool, J. Schubert, P. Ayala, H. Saito, M. Sampaio, E. Da Silva, C. Silva, J. Faria, D. Eder and A. Cherevan* “ <i>A thiomolybdate cluster for visible-light-driven hydrogen evolution: comparison of homogeneous and heterogeneous approaches</i> ” Sustainable Energy Fuels 2024 , 8, 1225-1235 DOI: 10.1039/D3SE01658G Selected for the front cover and is a part of the Themed collection
46.	L. Eisele, W. Chaikhan, S. Batool, A. Cherevan , D. Eder, K. Bica-Schröder “ <i>Boosting Visible-Light Carbon Dioxide Reduction with Imidazolium-Based Ionic Liquids</i> ” ChemCatChem 2024 , e202301454 DOI: 10.1002/cctc.202301454
45.	S. Chandrappa, S. Myakala, N. Koshi, S. Galbao, S. Lee, S. Bhattacharjee, D. Eder, A. Cherevan , D. Murthy “ <i>Unveiling Valence State-Dependent Photocatalytic Water Splitting Activity and Photocathodic Behavior in Visible Light-Active Iridium-Doped BaTiO₃</i> ” ACS Appl. Mater. Interfaces 2024 , 16, 7, 8763–8771 DOI: 10.1021/acsaami.3c16710
44.	Z. Huang, J. Rath, Q. Zhou, A. Cherevan , S. Naghdi, D. Eder “ <i>Hierarchically Micro- and Mesoporous Zeolitic Imidazolate Frameworks Through Selective Ligand Removal</i> ” Small 2023 , 2307981 DOI: 10.1002/smll.202307981
43.	J. Schubert, E. Doloszeski, P. Ayala, S. Myakala, J. Rath, B. Fickl, A. Giesriegl, B. Bayer, S. Kashiwaya, A. Cherevan* and D. Eder “ <i>Nature of the active Ni state for photocatalytic hydrogen generation</i> ” Advanced Materials Interfaces 2024 , 11, 2300695 DOI: 10.1002/admi.202300695 Selected for the front cover and is a prt of the Editors’ Choice collection
42.	Y. Xiao, S. Guo, Y. Xiang, D. Li, C. Zheng, Y. Ouyang, A. Cherevan , L. Gan, D. Eder, Q. Zhang and S. Huang “ <i>Engineering Configuration Compatibility and Electronic Structure in Axially Assembled Metal-Organic Framework Nanowire for High-Performance Lithium-Sulfur Batteries</i> ” ACS Applied Energy Letters 2023 , 8, 5107-5115 DOI: 10.1021/acsaenergylett.3c01698 Selected for the front cover

41.	S. Batool, M. Langer, S. Myakala, M. Heiland, D. Eder, C. Streb and A. Cherevan* <i>“Thiomolybdate clusters: from homogeneous catalysis to heterogenization and active sites”</i> Advanced Materials 2024 , 36, 2305730 DOI: 10.1002/adma.202305730 Selected for the back cover
40.	H. Boumeriame, A. Cherevan* , D. Eder, D. Apaydin, T. Chafik, E. Da Silva, J. Faria <i>“Engineering g-C₃N₄ with CuAl-layered double hydroxide in 2D/2D heterostructures for visible-light water splitting”</i> Journal of Colloid & Interface Science 2023 , 652, 2147-2158 DOI: 10.1016/j.jcis.2023.08.159
39.	S. Chandrappa, S. Galbao, P. Sankara Rama Krishnan, N. Koshi, S. Das, S. Myakala, S. Lee, A. Dutta, A. Cherevan , S. Bhattacharjee, D. H. K. Murthy <i>“Iridium-Doping as a Strategy to Realize Visible-Light Absorption and p-Type Behavior in BaTiO₃”</i> The Journal of Physical Chemistry C 2023 , 127, 25, 12383–12393 DOI: 10.1021/acs.jpcc.3c02942
38.	P. Ayala, S. Naghdi, S. P. Nandan, S. Nagaraju Myakala, J. Rath, H. Saito, P. Guggenberger, L. Lakhanlal, F. Kleitz, M. Caspary Toroker, A. Cherevan , D. Eder <i>“The Emergence of 2D Building Units in Metal-Organic Frameworks for Photocatalytic Hydrogen Evolution: A Case Study with COK-47”</i> Advanced Energy Materials 2023 , 13, 2300961 DOI: 10.1002/aenm.202300961 Selected for the back cover
37.	K. Rongraung, A. Cherevan , D. Eder, S. Chuangchote <i>“CdS/TiO₂ nanostructures synthesized via the SILAR method for enhanced photocatalytic glucose conversion and simultaneous hydrogen production under UV and simulated solar irradiation”</i> Catalysis Science & Technology 2023 , 13, 5556-5566 DOI: 10.1039/D3CY00225J Selected for the back cover
36.	S. Guo, Y. Xiao, A. Cherevan , D. Eder, L. Xu, Q. Zeng, Y. Ouyang, Q. Zhang, S. Huang <i>“Catalytic multivariable metal-organic frameworks for lithium-sulfur batteries”</i> Materials Today 2023 , 65, 37-46 DOI: 10.1016/j.mattod.2023.03.019
35.	J. Somasundaram, A. Ebrahimi, S. Nandan, A. Cherevan* , D. Eder, E. Novakova, R. Gyepes, Lukas Krivosudsky <i>“Functionalization of decavanadate anion by coordination to cobalt(II): Binding to proteins, cytotoxicity, and water oxidation catalysis”</i> Journal of Inorganic Biochemistry 2023 , 239, 112067 DOI: 10.1016/j.jinorgbio.2022.112067
34.	J. Torres-Rodríguez, S. Myakala, M. Salihovic, M. Musso, N. Hüsing, D. Eder, V. Presser, A. Cherevan* , M. Elsaesser <i>“Titania hybrid carbon spherogels for photocatalytic hydrogen evolution”</i> Carbon 2023 , 202, 487–494 DOI: 10.1016/j.carbon.2022.10.073
33.	E. Tanuhadi, J. Cano, S. Batool, A. Cherevan* , D. Eder, A. Rompel <i>“Ni₁₂ tetracubane cores with slow relaxation of magnetization and efficient charge utilization for photocatalytic hydrogen evolution”</i> Journal of Materials Chemistry C 2022 , 10, 17048-17052 DOI: 10.1039/D2TC03508A Selected for the back cover

32.	<p>T. Weller, J. Timm, L. Deilmann, T. Doerr, C. Greve, A. Cherevan, P. Beaucage, U. Wiesner, E. Herzig, D. Eder, R. Marschall "Effects of Periodic Pore Ordering on Photocatalytic Hydrogen Generation with Mesoporous Semiconductor Oxides"</p> <p>Small Structures 2022, 2200184 DOI: 10.1002/sstr.202200184</p>
31.	<p>T. Gupta, N. Rosza, M. Sauer, A. Goetz, M. Winzely, J. Rath, S. Naghdi, A. Lechner, D. Apaydin, A. Cherevan, G. Friedbacher, A. Foelske, S. Skoff, B. Bayer, D. Eder "Sonochemical Synthesis of Large Two-Dimensional Bi₂O₂CO₃ Nanosheets for Hydrogen Evolution in Photocatalytic Water Splitting"</p> <p>Advanced Sustainable Systems 2022, 6, 2100326 DOI: 10.1002/adsu.202100326</p>
30.	<p>S. Nandan, N. Gumerova, J. Schubert, H. Saito, A. Rompel, A. Cherevan*, D. Eder "Immobilization of a [Co^{III}Co^{II}(H₂O)W₁₁O₃₉]⁷⁻ polyoxoanion for photocatalytic oxygen evolution reaction"</p> <p>ACS Materials Au 2022, 2, 4, 505-515 DOI: 10.1021/acsmaterialsau.2c00025</p> <p>Selected for the front cover and as a part of the 2022 Rising Starts issue</p>
29.	<p>S. Batool, S. P. Nandan, S. N. Myakala, A. Rajagopal, J. S. Schubert, P. Ayala, S. Naghdi, H. Saito, J. Bernardi, C. Streb, A. Cherevan* and D. Eder "Surface-anchoring and active sites of [Mo₃S₁₃]²⁻ clusters as co-catalysts for photocatalytic hydrogen evolution"</p> <p>ACS Catalysis 2022, 12, 11, 6641-6650 DOI: 10.1021/acscatal.2c00972</p> <p>Selected for the front cover</p>
28.	<p>S. Naghdi, A. Cherevan, A. Giesriegl, R. Guillet-Nicolas, S. Biswas, T. Gupta, J. Wang, T. Haunold, B. Bayer, G. Rupprechter, M. Toroker, F. Kleitz and D. Eder "Selective ligand removal to improve accessibility of active sites in hierarchical MOFs for heterogeneous photocatalysis"</p> <p>Nature Communications 2022, 13, 282 DOI: 10.1038/s41467-021-27775-7</p>
27.	<p>H. Bomeriame, E. D. Silva, A. Cherevan, T. Chafik, J. Faria, D. Eder "Layered double hydroxide (LDH)-based materials: A mini-review on strategies to improve the performance for photocatalytic water splitting"</p> <p>Journal of Energy Chemistry 2022, 64, 406-431 DOI: 10.1016/j.jechem.2021.04.050</p>
26.	<p>J. Schubert, L. Kalantari, A. Lechner, A. Giesriegl, S. Nandan, P. Ayala, S. Kashiwaya, M. Sauer, A. Foelske, J. Rosen, P. Blaha, A. Cherevan* and D. Eder "Elucidating the formation and active state of Cu co-catalysts for photocatalytic hydrogen evolution"</p> <p>Journal of Materials Chemistry A 2021, 9, 21958-21971 DOI: 10.1039/D1TA05561E</p>
25.	<p>P. Ayala, A. Giesriegl, S. Nandan, S. Myakala, P. Wobrauschek and A. Cherevan* "Isolation strategy towards earth-abundant single-site co-catalysts for photocatalytic hydrogen evolution reaction"</p> <p>Catalysts 2021, 11 (4), 417 DOI: 10.3390/catal11040417</p>
24.	<p>E. Al-Sayed, S. P. Nandan, E. Tanuhadi, G. Giester, M. Arrigoni, G. Madsen, A. Cherevan, D. Eder, A. Rompel "Phosphate-Templated Encapsulation of a {Co^{II}₄O₄} Cubane in Germanotungstates as Carbon-Free Homogeneous Water Oxidation Photocatalysts"</p> <p>ChemSusChem 2021, 14 (12), 2529 DOI: 10.1002/cssc.202100506</p> <p>Selected for the front cover</p>

23.	J. Wang, A. Cherevan , C. Hannecart, S. Naghdi, S. Nandan, T. Gupta, D. Eder “ <i>Ti-based MOFs: New insights on the impact of ligand composition and hole scavengers on stability, charge separation and photocatalytic hydrogen evolution</i> ” Applied Catalysis B: Environmental 2021 , 283, 119626 DOI: 10.1016/j.apcatb.2020.119626
22.	H. Bao, M. Du, H. Wang, K. Wang, X. Zuo, F. Liu, L. Liu, D. Eder, A. Cherevan , S. Wang, L. Wan, S. Zhao and S. Liu “ <i>Samarium-Doped Nickel Oxide for Superior Inverted Perovskite Solar Cells: Insight into Doping Effect for Electronic Applications</i> ” Adv. Funct. Mater. 2021 , 2102452 DOI: 10.1002/adfm.202102452
21.	M. Salihovic, J. Schoiber, A. Cherevan , C. Rameshan, G. Fritz-Popovski, M. Ulbricht, S. Arnold, V. Presser, O. Paris, M. Musso, N. Hüsing, M. S. Elsaesser “ <i>Hybrid carbon spherogels: carbon encapsulation of nano-titania</i> ” Chem. Com. 2021 , 57, 32, 3905 DOI: 10.1039/D1CC00697E
20.	A. Cherevan* , S. P. Nandan, I. Roger, R. Liu, C. Streb and D. Eder „ <i>Polyoxometalates on Functional Substrates: Concepts, Synergies, and Future Perspectives</i> “ Advanced Science 2020 , 7, 1903511 DOI: 10.1002/advs.201903511
19.	J. Schubert, J. Popovic, G. Haselmann, S. Nandan, J. Wang, A. Giesriegl, A. Cherevan* and D. Eder “ <i>Immobilization of Co, Mn, Ni and Fe oxide co-catalysts on TiO₂ for photocatalytic water splitting reactions</i> ” Journal of Materials Chemistry A 2019 , 7, 18568-18579 DOI: 10.1039/C9TA05637H
18.	N. Lasemi, C. Rentenberger, R. Pospichal, A. Cherevan , M. Pfaffeneder-Kmen, G. Liedl and D. Eder „ <i>Femtosecond laser-assisted synthesis of Ni/Au BONs in various alcoholic solvents</i> ” Applied Physics B 2019 , 125:544 DOI: 10.1007/s00339-019-2826-z
17.	A. Cherevan* , L. Deilmann, T. Weller, D. Eder, R. Marschall „ <i>Mesoporous Semiconductors: A New Model To Assess Accessible Surface Area and Increased Photocatalytic Activity?</i> “ ACS Applied Energy Materials 2018 , 1 (11), 5787-5799 DOI: 10.1021/acsaem.8b01123
16.	T. Dörr, L. Deilmann, G. Haselmann, A. Cherevan , P. Zhang, P. Blaha, P. Oliveira, T. Kraus and D. Eder „ <i>Ordered Mesoporous TiO₂ gyroids: Effects of Pore Architecture and Nb doping on Photocatalytic Hydrogen Evolution under UV and VIS irradiation</i> “ Advanced Energy Materials 2018 , 8 (36), 1802566 DOI: 10.1002/aenm.201802566
15.	T. Weller, L. Deilmann, J. Timm, T. S. Dörr, P. A. Beaucage, A. Cherevan , U. B. Wiesner, D. Eder and R. Marschall „ <i>A crystalline and 3D periodically ordered mesoporous quaternary semiconductor for photocatalytic hydrogen generation</i> “ Nanoscale 2018 , 10, 3225–3234 DOI: 10.1039/C7NR09251B
14.	A. Cherevan* , P. Gebhardt, A. Kunzmann, R. D. Costa and D. Eder “ <i>Beware of Doping: Ta₂O₅ Nanotube Photocatalyst Using CNTs as Hard Templates</i> “ ACS Applied Energy Materials 2018 , 1 (3), 1259-1267 DOI: 10.1021/acsaem.8b00006
13.	N. Kemnade, P. Gebhardt, G. M. Haselmann, A. Cherevan , G. Wilde and D. Eder, “ <i>How to Evaluate and Manipulate Charge Transfer and Photocatalytic Response at Hybrid Nanocarbon–Metal Oxide Interfaces</i> ” Advanced Functional Materials 2018 , 28, 1704730 DOI: 10.1002/adfm.201704730

12.	A. Moya, N. Kemnade, M. R. Osorio, A. Cherevan , D. Granados, D. Eder and J. J. Vilatela “Large area photoelectrodes based on hybrids of CNT fibres and ALD-grown TiO ₂ ” J. Mater. Chem. A , 2017 , 5, 24695–24706 DOI: 10.1039/C7TA08074C
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10.	R. Kaindl, B. Bayer, R. Resel, T. Müller, V. Skakalova, G. Habler, R. Abart, A. Cherevan , D. Eder, M. Blatter, F. Fischer, J. Meyer, D. Polyushkin, and W. Waldhauser, “Growth, structure and stability of sputter-deposited MoS ₂ thin films” Beilstein J. Nanotechnol. , 2017 , 8, 1115–1126 DOI: 10.3762/bjnano.8.113
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7.	A. Moya, A. Cherevan , S. Marchesan, P. Gebhardt, M. Prato, D. Eder and J. Vilatela, “Oxygen vacancies and interfaces enhancing photocatalytic hydrogen production in mesoporous CNT/TiO ₂ hybrids” Applied Catalysis B: Environmental , 2015 , 179, 574-582 DOI: 10.1016/j.apcatb.2015.05.052
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5.	J. Shearer, A. Cherevan and D. Eder, “Application and Future Challenges of Functional Nanocarbon Hybrids” Advanced Materials 2014 , 26, (15), 2295-2318 10.1002/adma.201305254
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1.	E. Chernikova, Z. Poteryaeva, S. Belyaev, I. Nifantev, A. Shlyakhtin, Yu. Kostina, A. Cherevan , M. Efimov, G. Bondarenko and E. Sivtsov „Controlled synthesis of polyacrylonitrile via reversible

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