

S1: List of 184 articles included in the bibliometric analysis

1. Kumar, M.; Oyedun, A.O.; Kumar, A. A Comparative Analysis of Hydrogen Production from the Thermochemical Conversion of Algal Biomass. *International Journal of Hydrogen Energy* **2019**, *44*, 10384–10397, doi:10.1016/j.ijhydene.2019.02.220.
2. Tamburic, B.; Zemichael, F.W.; Maitland, G.C.; Hellgardt, K. A Novel Nutrient Control Method to Deprive Green Algae of Sulphur and Initiate Spontaneous Hydrogen Production. *International Journal of Hydrogen Energy* **2012**, *37*, 8988–9001, doi:10.1016/j.ijhydene.2012.02.043.
3. Nagy, V.; Vidal-Meireles, A.; Tengölics, R.; Rákely, G.; Garab, G.; Kovács, L.; Tóth, S.Z. Ascorbate Accumulation during Sulphur Deprivation and Its Effects on Photosystem II Activity and H₂ Production of the Green Alga *Chlamydomonas reinhardtii*. *Plant, Cell & Environment* **2016**, *39*, 1460–1472, doi:10.1111/pce.12701.
4. Ding, L.; Chan Gutierrez, E.; Cheng, J.; Xia, A.; O'Shea, R.; Guneratnam, A.J.; Murphy, J.D. Assessment of Continuous Fermentative Hydrogen and Methane Co-Production Using Macro- and Micro-Algae with Increasing Organic Loading Rate. *Energy* **2018**, *151*, 760–770, doi:10.1016/j.energy.2018.03.103.
5. Lü, F.; Ji, J.; Shao, L.; He, P. Bacterial Bioaugmentation for Improving Methane and Hydrogen Production from Microalgae. *Biotechnol Biofuels* **2013**, *6*, 92, doi:10.1186/1754-6834-6-92.
6. Mullner, K.; Happe, T. Biofuel from Algae Photobiological Hydrogen Production and CO₂-Fixation. *IJETP* **2007**, *5*, 290, doi:10.1504/IJETP.2007.014735.
7. Kumar, G.; Zhen, G.; Sivagurunathan, P.; Bakonyi, P.; Nemestóthy, N.; Bélafi-Bakó, K.; Kobayashi, T.; Xu, K.-Q. Biogenic H₂ Production from Mixed Microalgae Biomass: Impact of PH Control and Methanogenic Inhibitor (BESA) Addition. *Biofuel Res. J.* **2016**, *3*, 470–474, doi:10.18331/BRJ2016.3.3.6.
8. Carrillo-Reyes, J.; Buitrón, G. Biohydrogen and Methane Production via a Two-Step Process Using an Acid Pretreated Native Microalgae Consortium. *Bioresource Technology* **2016**, *221*, 324–330, doi:10.1016/j.biortech.2016.09.050.
9. Nayak, B.K.; Roy, S.; Das, D. Biohydrogen Production from Algal Biomass (*Anabaena sp.* PCC 7120) Cultivated in Airlift Photobioreactor. *International Journal of Hydrogen Energy* **2014**, *39*, 7553–7560, doi:10.1016/j.ijhydene.2013.07.120.
10. Sarma, M.K.; Ramkumar, N.; Subudhi, S. Biohydrogen Production from Aquatic Plant and Algae Biomass by *Enterobacter cloacae* Strain DT-1. *Chem. Eng. Technol.* **2021**, ceat.202000547, doi:10.1002/ceat.202000547.
11. Tamayo-Ordoñez, Y. de J.; Ayil-Gutiérrez, B.A.; Moreno-Davila, I.M.M.; Tamayo-Ordoñez, F.A.; Córdova-Quiroz, A.V.; Poot-Poot, W.A.; Damas-Damas, S.; Villanueva-Alonzo, H. de J.; Tamayo-Ordoñez, M.C. Bioinformatic Analysis and Relative Expression of *Hyd* and *Fdx* during H₂ Production in Microalgae. *Phycological Research* **2022**, pre.12500, doi:10.1111/pre.12500.
12. Bala Amutha, K.; Murugesan, A.G. Biological Hydrogen Production by the Algal Biomass *Chlorella vulgaris* MSU 01 Strain Isolated from Pond Sediment. *Bioresource Technology* **2011**, *102*, 194–199, doi:10.1016/j.biortech.2010.06.008.
13. Zhang, Y.; Fan, X.; Yang, Z.; Wang, H.; Yang, D.; Guo, R. Characterization of H₂ Photoproduction by a New Marine Green Alga, *Platymonas helgolandica* var. *tsingtaensis*. *Applied Energy* **2012**, *92*, 38–43, doi:10.1016/j.apenergy.2011.09.044.
14. Guo, Z.; Li, Y.; Guo, H. Characterization of H₂ Photoproduction by Marine Green Alga *Tetraselmis subcordiformis* Integrated with an Alkaline Fuel Cell. *Biotechnol Lett* **2016**, *38*, 435–440, doi:10.1007/s10529-015-2008-9.
15. Cornish, A.J.; Green, R.; Gärtner, K.; Mason, S.; Hegg, E.L. Characterization of Hydrogen Metabolism in the Multicellular Green Alga *Volvox carteri*. *PLoS ONE* **2015**, *10*, e0125324, doi:10.1371/journal.pone.0125324.

16. Cheng, J.; Liu, Y.; Lin, R.; Xia, A.; Zhou, J.; Cen, K. Cogeneration of Hydrogen and Methane from the Pretreated Biomass of Algae Bloom in Taihu Lake. *International Journal of Hydrogen Energy* **2014**, *39*, 18793–18802, doi:10.1016/j.ijhydene.2014.09.056.
17. Batista, A.P.; Ambrosano, L.; Graça, S.; Sousa, C.; Marques, P.A.S.S.; Ribeiro, B.; Botrel, E.P.; Castro Neto, P.; Gouveia, L. Combining Urban Wastewater Treatment with Biohydrogen Production – An Integrated Microalgae-Based Approach. *Bioresource Technology* **2015**, *184*, 230–235, doi:10.1016/j.biortech.2014.10.064.
18. Liu, C.; Kong, L.; Wufuer, A.; Wang, Y.; Dai, L. Correlation between Hydrogen Yield and Product Distribution in Algae Conversion through an Isopropanol/Water System. *RSC Adv.* **2018**, *8*, 38614–38620, doi:10.1039/C8RA07090C.
19. Gad El-Rab, S.M.F.; Hifney, A.F.; Abdel-Basset, R. Costless and Huge Hydrogen Yield by Manipulation of Iron Concentrations in the New Bacterial Strain *Brevibacillus invocatus* SAR Grown on Algal Biomass. *International Journal of Hydrogen Energy* **2018**, *43*, 18896–18907, doi:10.1016/j.ijhydene.2018.08.116.
20. Yan, Q.; Zhao, M.; Miao, H.; Ruan, W.; Song, R. Coupling of the Hydrogen and Polyhydroxyalkanoates (PHA) Production through Anaerobic Digestion from Taihu Blue Algae. *Bioresource Technology* **2010**, *101*, 4508–4512, doi:10.1016/j.biortech.2010.01.073.
21. Putatunda, C.; Behl, M.; Solanki, P.; Sharma, S.; Bhatia, S.K.; Walia, A.; Bhatia, R.K. Current Challenges and Future Technology in Photofermentation-Driven Biohydrogen Production by Utilizing Algae and Bacteria. *International Journal of Hydrogen Energy* **2022**, S0360319922046651, doi:10.1016/j.ijhydene.2022.10.042.
22. Yang, S.; Guarnieri, M.T.; Smolinski, S.; Ghirardi, M.; Pienkos, P.T. De Novo Transcriptomic Analysis of Hydrogen Production in the Green Alga *Chlamydomonas moewusii* through RNA-Seq. *Biotechnol Biofuels* **2013**, *6*, 118, doi:10.1186/1754-6834-6-118.
23. Venkata Subhash, G.; Venkata Mohan, S. Deoiled Algal Cake as Feedstock for Dark Fermentative Biohydrogen Production: An Integrated Biorefinery Approach. *International Journal of Hydrogen Energy* **2014**, *39*, 9573–9579, doi:10.1016/j.ijhydene.2014.04.003.
24. Tamburic, B.; Zemichael, F.W.; Crudge, P.; Maitland, G.C.; Hellgardt, K. Design of a Novel Flat-Plate Photobioreactor System for Green Algal Hydrogen Production. *International Journal of Hydrogen Energy* **2011**, *36*, 6578–6591, doi:10.1016/j.ijhydene.2011.02.091.
25. Hoshino, T.; Johnson, D.J.; Cuello, J.L. Design of New Strategy for Green Algal Photo-Hydrogen Production: Spectral-Selective Photosystem I Activation and Photosystem II Deactivation. *Bioresource Technology* **2012**, *120*, 233–240, doi:10.1016/j.biortech.2012.06.011.
26. Ran, C.; Zhang, F.; Sun, H.; Zhao, B. Effect of Culture Medium on Hydrogen Production by Sulfur-Deprived Marine Green Algae *Platymonas subcordiformis*. *Biotechnol Bioproc E* **2009**, *14*, 835–841, doi:10.1007/s12257-008-0287-x.
27. Phunpruch S. Effect of Light Intensity and Light Pattern on Hydrogen Production by Unicellular Green Alga *Chlorella sp.* LSD-W2. *Asia-Pacific Journal of Science and Technology* **2019**, *24*, 17, doi:10.14456/APST.2019.14.
28. Hahn, J.J.; Ghirardi, M.L.; Jacoby, W.A. Effect of Process Variables on Photosynthetic Algal Hydrogen Production. *Biotechnol. Prog.* **2004**, *20*, 989–991, doi:10.1021/bp0341287.
29. Corrêa, D.O.; Santos, B.; Dias, F.G.; Vargas, J.V.C.; Mariano, A.B.; Balmant, W.; Rosa, M.P.; Savi, D.C.; Kava, V.; Glienke, C.; et al. Enhanced Biohydrogen Production from Microalgae by Diesel Engine Hazardous Emissions Fixation. *International Journal of Hydrogen Energy* **2017**, *42*, 21463–21475, doi:10.1016/j.ijhydene.2017.05.176.
30. Sun, Y.; Chen, M.; Yang, H.; Zhang, J.; Kuang, T.; Huang, F. Enhanced H₂ Photoproduction by Down-Regulation of Ferredoxin-NADP⁺ Reductase (FNR) in the Green Alga *Chlamydomonas reinhardtii*. *International Journal of Hydrogen Energy* **2013**, *38*, 16029–16037, doi:10.1016/j.ijhydene.2013.10.011.

31. Abu Bakar, M.A.; Bidin, N. Enhancement of Green Algae Hydrogen Production By Laser Irradiation. *Jurnal Teknologi* **2016**, *78*, doi:10.11113/jt.v78.7546.
32. Rumpel, S.; Siebel, J.F.; Farès, C.; Duan, J.; Reijerse, E.; Happe, T.; Lubitz, W.; Winkler, M. Enhancing Hydrogen Production of Microalgae by Redirecting Electrons from Photosystem I to Hydrogenase. *Energy Environ. Sci.* **2014**, *7*, 3296–3301, doi:10.1039/C4EE01444H.
33. Pankratz, S.; Kumar, M.; Oyedun, A.O.; Gemechu, E.; Kumar, A. Environmental Performances of Diluents and Hydrogen Production Pathways from Microalgae in Cold Climates: Open Raceway Ponds and Photobioreactors Coupled with Thermochemical Conversion. *Algal Research* **2020**, *47*, 101815, doi:10.1016/j.algal.2020.101815.
34. Kosourov, S.; Murukesan, G.; Seibert, M.; Allahverdiyeva, Y. Evaluation of Light Energy to H₂ Energy Conversion Efficiency in Thin Films of Cyanobacteria and Green Alga under Photoautotrophic Conditions. *Algal Research* **2017**, *28*, 253–263, doi:10.1016/j.algal.2017.09.027.
35. Anburajan, P.; Yoon, J.-J.; Kumar, G.; Park, J.-H.; Kim, S.-H. Evaluation of Process Performance on Biohydrogen Production in Continuous Fixed Bed Reactor (C-FBR) Using Acid Algae Hydrolysate (AAH) as Feedstock. *International Journal of Hydrogen Energy* **2019**, *44*, 2164–2169, doi:10.1016/j.ijhydene.2018.09.098.
36. Wirth, R.; Lakatos, G.; Maróti, G.; Bagi, Z.; Minárovics, J.; Nagy, K.; Kondorosi, É.; Rákely, G.; Kovács, K.L. Exploitation of Algal-Bacterial Associations in a Two-Stage Biohydrogen and Biogas Generation Process. *Biotechnol Biofuels* **2015**, *8*, 59, doi:10.1186/s13068-015-0243-x.
37. Kawaguchi, H.; Hashimoto, K.; Hirata, K.; Miyamoto, K. H₂ Production from Algal Biomass by a Mixed Culture of *Rhodobium marinum* A-501 and *Lactobacillus amylovorus*. *Journal of Bioscience and Bioengineering* **2001**, *91*, 277–282, doi:10.1016/S1389-1723(01)80134-1.
38. Martín del Campo, J.S.; Patiño, R. Harvesting Microalgae Cultures with Superabsorbent Polymers: Desulfurization of *Chlamydomonas reinhardtii* for Hydrogen Production: Harvesting Microalgae Cultures. *Biotechnol. Bioeng.* **2013**, *110*, 3227–3234, doi:10.1002/bit.24989.
39. Papazi, A.; Andronis, E.; Ioannidis, N.E.; Chaniotakis, N.; Kotzabasis, K. High Yields of Hydrogen Production Induced by Meta-Substituted Dichlorophenols Biodegradation from the Green Alga *Scenedesmus obliquus*. *PLoS ONE* **2012**, *7*, e49037, doi:10.1371/journal.pone.0049037.
40. Stripp, S.T.; Happe, T. How Algae Produce Hydrogen—News from the Photosynthetic Hydrogenase. *Dalton Trans.* **2009**, 9960, doi:10.1039/b916246a.
41. Ren, H.-Y.; Liu, B.-F.; Kong, F.; Zhao, L.; Ren, N. Hydrogen and Lipid Production from Starch Wastewater by Co-Culture of Anaerobic Sludge and Oleaginous Microalgae with Simultaneous COD, Nitrogen and Phosphorus Removal. *Water Research* **2015**, *85*, 404–412, doi:10.1016/j.watres.2015.08.057.
42. Kolbe, K.; Lechtenböhmer, S.; Fischbeck, M. Hydrogen Derived from Algae and Cyanobacteria as a Decentralized Fueling Option for Hydrogen Powered Cars: Size, Space, and Cost Characteristics of Potential Bioreactors. *International Journal of Sustainable Transportation* **2020**, *14*, 325–334, doi:10.1080/15568318.2018.1547935.
43. Demirbas, A. Hydrogen from Mosses and Algae via Pyrolysis and Steam Gasification. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* **2009**, *32*, 172–179, doi:10.1080/15567030802464388.
44. Volgusheva, A.; Kukarskikh, G.; Krendeleva, T.; Rubin, A.; Mamedov, F. Hydrogen Photoproduction in Green Algae *Chlamydomonas reinhardtii* under Magnesium Deprivation. *RSC Adv.* **2015**, *5*, 5633–5637, doi:10.1039/C4RA12710B.
45. Megía, P.J.; Carrero, A.; Calles, J.A.; Vizcaíno, A.J. Hydrogen Production from Steam Reforming of Acetic Acid as a Model Compound of the Aqueous Fraction of Microalgae HTL Using Co-M/SBA-15 (M: Cu, Ag, Ce, Cr) Catalysts. *Catalysts* **2019**, *9*, 1013, doi:10.3390/catal9121013.

46. Cherad, R.; Onwudili, J.A.; Biller, P.; Williams, P.T.; Ross, A.B. Hydrogen Production from the Catalytic Supercritical Water Gasification of Process Water Generated from Hydrothermal Liquefaction of Microalgae. *Fuel* **2016**, *166*, 24–28, doi:10.1016/j.fuel.2015.10.088.
47. Díaz-Rey, M.R.; Cortés-Reyes, M.; Herrera, C.; Larrubia, M.A.; Amadeo, N.; Laborde, M.; Alemany, L.J. Hydrogen-Rich Gas Production from Algae-Biomass by Low Temperature Catalytic Gasification. *Catalysis Today* **2015**, *257*, 177–184, doi:10.1016/j.cattod.2014.04.035.
48. Hahn, J.J.; Ghirardi, M.L.; Jacoby, W.A. Immobilized Algal Cells Used for Hydrogen Production. *Biochemical Engineering Journal* **2007**, *37*, 75–79, doi:10.1016/j.bej.2007.03.010.
49. Kumar, G.; Zhen, G.; Kobayashi, T.; Sivagurunathan, P.; Kim, S.H.; Xu, K.Q. Impact of pH Control and Heat Pre-Treatment of Seed Inoculum in Dark H₂ Fermentation: A Feasibility Report Using Mixed Microalgae Biomass as Feedstock. *International Journal of Hydrogen Energy* **2016**, *41*, 4382–4392, doi:10.1016/j.ijhydene.2015.08.069.
50. Guo, Z.; Chen, Z.; Zhang, W.; Yu, X.; Jin, M. Improved Hydrogen Photoproduction Regulated by Carbonylcyanide M-Chlorophenylhydrazone from Marine Green Alga *Platymonas subcordiformis* Grown in CO₂-Supplemented Air Bubble Column Bioreactor. *Biotechnol Lett* **2008**, *30*, 877–883, doi:10.1007/s10529-008-9637-1.
51. Márquez-Reyes, L.A.; Sánchez-Saavedra, M. del P.; Valdez-Vazquez, I. Improvement of Hydrogen Production by Reduction of the Photosynthetic Oxygen in Microalgae Cultures of *Chlamydomonas gloeopara* and *Scenedesmus obliquus*. *International Journal of Hydrogen Energy* **2015**, *40*, 7291–7300, doi:10.1016/j.ijhydene.2015.04.060.
52. Lin, R.; Cheng, J.; Murphy, J.D. Inhibition of Thermochemical Treatment on Biological Hydrogen and Methane Co-Production from Algae-Derived Glucose/Glycine. *Energy Conversion and Management* **2018**, *158*, 201–209, doi:10.1016/j.enconman.2017.12.052.
53. Adnan, M.A.; Hossain, M.M. Integrated Drying and Gasification of Wet Microalgae Biomass to Produce H₂ Rich Syngas – A Thermodynamic Approach by Considering in-Situ Energy Supply. *International Journal of Hydrogen Energy* **2019**, *44*, 10361–10373, doi:10.1016/j.ijhydene.2019.02.165.
54. Zhang, J.-Y.; Qi, H.; He, Z.-Z.; Yu, X.-Y.; Ruan, L.-M. Investigation of Light Transfer Procedure and Photobiological Hydrogen Production of Microalgae in Photobioreactors at Different Locations of China. *International Journal of Hydrogen Energy* **2017**, *42*, 19709–19722, doi:10.1016/j.ijhydene.2017.06.079.
55. He, M.; Li, L.; Liu, J. Isolation of Wild Microalgae from Natural Water Bodies for High Hydrogen Producing Strains. *International Journal of Hydrogen Energy* **2012**, *37*, 4046–4056, doi:10.1016/j.ijhydene.2011.11.089.
56. Lin, H.-D.; Liu, B.-H.; Kuo, T.-T.; Tsai, H.-C.; Feng, T.-Y.; Huang, C.-C.; Chien, L.-F. Knockdown of PsbO Leads to Induction of HydA and Production of Photobiological H₂ in the Green Alga *Chlorella sp.* DT. *Bioresource Technology* **2013**, *143*, 154–162, doi:10.1016/j.biortech.2013.05.101.
57. Lee, D.-H. Levelized Cost of Energy and Financial Evaluation for Biobutanol, Algal Biodiesel and Biohydrogen during Commercial Development. *International Journal of Hydrogen Energy* **2016**, *41*, 21583–21599, doi:10.1016/j.ijhydene.2016.07.242.
58. Meyer, M.A.; Weiss, A. Life Cycle Costs for the Optimized Production of Hydrogen and Biogas from Microalgae. *Energy* **2014**, *78*, 84–93, doi:10.1016/j.energy.2014.08.069.
59. Wünschiers, R. Light Dependent Production of Hydrogen Gas by Green Algae. The Future Energy Carrier in the Classroom? *Journal of Biological Education* **2000**, *34*, 214–217, doi:10.1080/00219266.2000.9655721.
60. Vargas, J.V.C.; Kava, V.; Ordonez, J.C.; Balmant, W.; Mariano, A.B. Mass Transfer Modeling and Maximization of Hydrogen Rhythmic Production from Genetically Modified Microalgae Biomass. *International Journal of Heat and Mass Transfer* **2016**, *101*, 1–9, doi:10.1016/j.ijheatmasstransfer.2016.04.117.

61. Zolotareva, E.K.; Shnyukova, E.I.; Podorvanov, V.V. Microalgae as Hydrogen Producers. *Inter J Algae* **2010**, *12*, 199–220, doi:10.1615/InterJAlgae.v12.i3.10.
62. Lin, K.C.; Lin, Y.-C.; Hsiao, Y.-H. Microwave Plasma Studies of Spirulina Algae Pyrolysis with Relevance to Hydrogen Production. *Energy* **2014**, *64*, 567–574, doi:10.1016/j.energy.2013.09.055.
63. Jo, J.H.; Lee, D.S.; Park, J.M. Modeling and Optimization of Photosynthetic Hydrogen Gas Production by Green Alga *Chlamydomonas reinhardtii* in Sulfur-Deprived Circumstance. *Biotechnol. Prog.* **2006**, *22*, 431–437, doi:10.1021/bp050258z.
64. White, S.; Anandraj, A.; Trois, C. NADPH Fluorescence as an Indicator of Hydrogen Production in the Green Algae *Chlamydomonas reinhardtii*. *International Journal of Hydrogen Energy* **2014**, *39*, 1640–1647, doi:10.1016/j.ijhydene.2013.11.016.
65. Saifuddin, N.; Ong, M.Y.; Priatharsini, P. Optimization of Photosynthetic Hydrogen Gas Production by Green Alga in Sulfur Deprived Condition. *Indian Journal of Science and Technology* **2016**, *9*, doi:10.17485/ijst/2016/v9i40/93390.
66. Meuser, J.E.; Ananyev, G.; Wittig, L.E.; Kosourov, S.; Ghirardi, M.L.; Seibert, M.; Dismukes, G.C.; Posewitz, M.C. Phenotypic Diversity of Hydrogen Production in Chlorophycean Algae Reflects Distinct Anaerobic Metabolisms. *Journal of Biotechnology* **2009**, *142*, 21–30, doi:10.1016/j.jbiotec.2009.01.015.
67. Markov, S.; Eivazova, E.; Greenwood, J. Photostimulation of H₂ Production in the Green Alga *Chlamydomonas reinhardtii* upon Photoinhibition of its O₂-Evolving System. *International Journal of Hydrogen Energy* **2006**, *31*, 1314–1317, doi:10.1016/j.ijhydene.2005.11.017.
68. Timmins, M.; Thomas-Hall, S.R.; Darling, A.; Zhang, E.; Hankamer, B.; Marx, U.C.; Schenk, P.M. Phylogenetic and Molecular Analysis of Hydrogen-Producing Green Algae. *Journal of Experimental Botany* **2009**, *60*, 1691–1702, doi:10.1093/jxb/erp052.
69. Papazi, A.; Gjindali, A.-I.; Kastanaki, E.; Assimakopoulos, K.; Stamatakis, K.; Kotzabasis, K. Potassium Deficiency, a “Smart” Cellular Switch for Sustained High Yield Hydrogen Production by the Green Alga *Scenedesmus obliquus*. *International Journal of Hydrogen Energy* **2014**, *39*, 19452–19464, doi:10.1016/j.ijhydene.2014.09.096.
70. Magdeldin, M.; Kohl, T.; Järvinen, M. Process Modeling, Synthesis and Thermodynamic Evaluation of Hydrogen Production from Hydrothermal Processing of Lipid Extracted Algae Integrated with a Downstream Reformer Conceptual Plant. *Biofuels* **2016**, *7*, 97–116, doi:10.1080/17597269.2015.1118785.
71. Hao, X.; Peng, H.; Xu, P.; He, M.; Dou, B. Production of H₂ by Steam Reforming in *Schizochytrium* Algae Oil of Cell Disruption and Extraction via Ultrasound Method. *International Journal of Hydrogen Energy* **2019**, *44*, 15779–15786, doi:10.1016/j.ijhydene.2018.09.220.
72. Ibrahim, A.F.M.; Dandamudi, K.P.R.; Deng, S.; Lin, J.Y.S. Pyrolysis of Hydrothermal Liquefaction Algal Biochar for Hydrogen Production in a Membrane Reactor. *Fuel* **2020**, *265*, 116935, doi:10.1016/j.fuel.2019.116935.
73. Chochois, V.; Constans, L.; Dauvillée, D.; Beyly, A.; Solivérès, M.; Ball, S.; Peltier, G.; Cournac, L. Relationships between PSII-Independent Hydrogen Bioproduction and Starch Metabolism as Evidenced from Isolation of Starch Catabolism Mutants in the Green Alga *Chlamydomonas Reinhardtii*. *International Journal of Hydrogen Energy* **2010**, *35*, 10731–10740, doi:10.1016/j.ijhydene.2010.03.052.
74. Oey, M.; Ross, I.L.; Stephens, E.; Steinbeck, J.; Wolf, J.; Radzun, K.A.; Kügler, J.; Ringsmuth, A.K.; Kruse, O.; Hankamer, B. RNAi Knock-Down of LHCBM1, 2 and 3 Increases Photosynthetic H₂ Production Efficiency of the Green Alga *Chlamydomonas reinhardtii*. *PLoS ONE* **2013**, *8*, e61375, doi:10.1371/journal.pone.0061375.
75. Ran, C.; Yu, X.; Jin, M.; Zhang, W. Role of Carbonyl Cyanide M-Chlorophenylhydrazone in Enhancing Photobiological Hydrogen Production by Marine Green Alga *Platymonas subcordiformis*. *Biotechnol. Prog.* **2006**, *22*, 438–443, doi:10.1021/bp050289u.

76. Pongpadung, P.; Liu, J.; Yokthongwattana, K.; Techapinyawat, S.; Juntawong, N. Screening for Hydrogen-Producing Strains of Green Microalgae in Phosphorus or Sulphur Deprived Medium under Nitrogen Limitation. *ScienceAsia* **2015**, *41*, 97, doi:10.2306/scienceasia1513-1874.2015.41.097.
77. Guan, Y.; Zhang, W.; Deng, M.; Jin, M.; Yu, X. Significant Enhancement of Photobiological H₂ Evolution by Carbonylcyanide m-Chlorophenylhydrazone in the Marine Green Alga *Platymonas subcordiformis*. *Biotechnology Letters* **2004**, *26*, 1031–1035, doi:10.1023/B:BILE.0000032961.71564.00.
78. Dębowksi, M.; Dudek, M.; Nowicka, A.; Quattrocelli, P.; Kazimierowicz, J.; Zieliński, M. Suitability of Pre-Digested Dairy Effluent for Mixotrophic Cultivation of the Hydrogen-Producing Microalgae *Tetraselmis subcordiformis*. *Environmental Technology* **2022**, *1*–12, doi:10.1080/09593330.2022.2112981.
79. Batyrova, K.; Gavrisheva, A.; Ivanova, E.; Liu, J.; Tsygankov, A. Sustainable Hydrogen Photoproduction by Phosphorus-Deprived Marine Green Microalgae *Chlorella sp.* *IJMS* **2015**, *16*, 2705–2716, doi:10.3390/ijms16022705.
80. Li, H.; Zhang, L.; Shu, L.; Zhuang, X.; Liu, Y.; Chen, J.; Hu, Z. Sustainable Photosynthetic H₂-Production Mediated by Artificial MiRNA Silencing of OEE2 Gene in Green Alga *Chlamydomonas reinhardtii*. *International Journal of Hydrogen Energy* **2015**, *40*, 5609–5616, doi:10.1016/j.ijhydene.2015.02.073.
81. Chen, H.; Guo, Y.; Zhang, Z.; Mao, W.; Shen, C.; Xiong, W.; Yao, Y.; Zhao, X.; Hu, Y.; Zou, Z.; et al. Symbiotic Algae–Bacteria Dressing for Producing Hydrogen to Accelerate Diabetic Wound Healing. *Nano Lett.* **2022**, *22*, 229–237, doi:10.1021/acs.nanolett.1c03693.
82. Dudek, M.; Dębowksi, M.; Kazimierowicz, J.; Zieliński, M.; Quattrocelli, P.; Nowicka, A. The Cultivation of Biohydrogen-Producing *Tetraselmis subcordiformis* Microalgae as the Third Stage of Dairy Wastewater Aerobic Treatment System. *Sustainability* **2022**, *14*, 12085, doi:10.3390/su141912085.
83. Kosourov, S.; Makarova, V.; Fedorov, A.S.; Tsygankov, A.; Seibert, M.; Ghirardi, M.L. The Effect of Sulfur Re-Addition on H₂ Photoproduction by Sulfur-Deprived Green Algae. *Photosynth Res* **2005**, *85*, 295–305, doi:10.1007/s11120-005-5105-0.
84. Vargas, J.V.C.; Mariano, A.B.; Corrêa, D.O.; Ordonez, J.C. The Microalgae Derived Hydrogen Process in Compact Photobioreactors. *International Journal of Hydrogen Energy* **2014**, *39*, 9588–9598, doi:10.1016/j.ijhydene.2014.04.093.
85. Roy, S.; Kumar, K.; Ghosh, S.; Das, D. Thermophilic Biohydrogen Production Using Pre-Treated Algal Biomass as Substrate. *Biomass and Bioenergy* **2014**, *61*, 157–166, doi:10.1016/j.biombioe.2013.12.006.
86. Ma, W.; Chen, M.; Wang, L.; Wei, L.; Wang, Q. Treatment with NaHSO₃ Greatly Enhances Photobiological H₂ Production in the Green Alga *Chlamydomonas reinhardtii*. *Bioresource Technology* **2011**, *102*, 8635–8638, doi:10.1016/j.biortech.2011.03.052.
87. Nagy, V.; Podmaniczki, A.; Vidal-Meireles, A.; Tengölics, R.; Kovács, L.; Rákely, G.; Scoma, A.; Tóth, S.Z. Water-Splitting-Based, Sustainable and Efficient H₂ Production in Green Algae as Achieved by Substrate Limitation of the Calvin–Benson–Bassham Cycle. *Biotechnol Biofuels* **2018**, *11*, 69, doi:10.1186/s13068-018-1069-0.
88. Sirawattanamongkol, T.; Maswanna, T.; Maneeruttanarungroj, C. A Newly Isolated Green Alga *Chlorella sp.* KLSc59: Potential for Biohydrogen Production. *J Appl Phycol* **2020**, *32*, 2927–2936, doi:10.1007/s10811-020-02140-1.
89. Maneeruttanarungroj, C.; Lindblad, P.; Incharoensakdi, A. A Newly Isolated Green Alga, *Tetraspora sp.* CU2551, from Thailand with Efficient Hydrogen Production. *International Journal of Hydrogen Energy* **2010**, *35*, 13193–13199, doi:10.1016/j.ijhydene.2010.08.096.
90. Sharma, P.; Sivaramakrishnaiah, M.; Deepanraj, B.; Saravanan, R.; Reddy, M.V. A Novel Optimization Approach for Biohydrogen Production Using Algal Biomass. *International Journal of Hydrogen Energy* **2022**, S0360319922045359, doi:10.1016/j.ijhydene.2022.09.274.

91. Kumar, M.; Oyedun, A.O.; Kumar, A. A Parametric Study through the Modelling of Hydrothermal Gasification for Hydrogen Production from Algal Biomass. *Can J Chem Eng* **2021**, *99*, doi:10.1002/cjce.23999.
92. Musa Ardo, F.; Wei Lim, J.; Ramli, A.; Kee Lam, M.; Kiatkittipong, W.; Alaaeldin Abdelfattah, E.; Kashif Shahid, M.; Usman, A.; Wongsakulphasatch, S.; Tasnim Sahrin, N. A Review in Redressing Challenges to Produce Sustainable Hydrogen from Microalgae for Aviation Industry. *Fuel* **2022**, *330*, 125646, doi:10.1016/j.fuel.2022.125646.
93. Ban, S.; Lin, W.; Wu, F.; Luo, J. Algal-Bacterial Cooperation Improves Algal Photolysis-Mediated Hydrogen Production. *Bioresource Technology* **2018**, *251*, 350–357, doi:10.1016/j.biortech.2017.12.072.
94. Wang, Y.; Zhuang, X.; Chen, M.; Zeng, Z.; Cai, X.; Li, H.; Hu, Z. An Endogenous MicroRNA (MiRNA1166.1) Can Regulate Photobio-H₂ Production in Eukaryotic Green Alga *Chlamydomonas reinhardtii*. *Biotechnol Biofuels* **2018**, *11*, 126, doi:10.1186/s13068-018-1126-8.
95. Vargas, S.R.; Santos, P.V. dos; Giraldi, L.A.; Zaiat, M.; Calijuri, M. do C. Anaerobic Phototrophic Processes of Hydrogen Production by Different Strains of Microalgae *Chlamydomonas* sp. *FEMS Microbiology Letters* **2018**, *365*, doi:10.1093/femsle/fny073.
96. Das, A.A.K.; Esfahani, M.M.N.; Velev, O.D.; Pamme, N.; Paunov, V.N. Artificial Leaf Device for Hydrogen Generation from Immobilised *C. reinhardtii* Microalgae. *J. Mater. Chem. A* **2015**, *3*, 20698–20707, doi:10.1039/C5TA07112G.
97. Lakatos, G.; Deák, Z.; Vass, I.; Rétfalvi, T.; Rozgonyi, S.; Rákely, G.; Ördög, V.; Kondorosi, É.; Maróti, G. Bacterial Symbionts Enhance Photo-Fermentative Hydrogen Evolution of *Chlamydomonas* Algae. *Green Chem.* **2014**, *16*, 4716–4727, doi:10.1039/C4GC00745J.
98. Srirangan, K.; Pyne, M.E.; Perry Chou, C. Biochemical and Genetic Engineering Strategies to Enhance Hydrogen Production in Photosynthetic Algae and Cyanobacteria. *Bioresource Technology* **2011**, *102*, 8589–8604, doi:10.1016/j.biortech.2011.03.087.
99. Zhang, L.; Happe, T.; Melis, A. Biochemical and Morphological Characterization of Sulfur-Deprived and H₂-Producing *Chlamydomonas reinhardtii* (Green Alga). *Planta* **2002**, *214*, 552–561, doi:10.1007/s004250100660.
100. Li, S.; Li, F.; Zhu, X.; Liao, Q.; Chang, J.-S.; Ho, S.-H. Biohydrogen Production from Microalgae for Environmental Sustainability. *Chemosphere* **2022**, *291*, 132717, doi:10.1016/j.chemosphere.2021.132717.
101. Oncel, S.S.; Kose, A.; Faraloni, C.; Imamoglu, E.; Elibol, M.; Torzillo, G.; Vardar Sukan, F. Biohydrogen Production from Model Microalgae *Chlamydomonas reinhardtii*: A Simulation of Environmental Conditions for Outdoor Experiments. *International Journal of Hydrogen Energy* **2015**, *40*, 7502–7510, doi:10.1016/j.ijhydene.2014.12.121.
102. Ahmed, S.F.; Mofijur, M.; Nahrin, M.; Chowdhury, S.N.; Nuzhat, S.; Alherek, M.; Rafa, N.; Ong, H.C.; Nghiem, L.D.; Mahlia, T.M.I. Biohydrogen Production from Wastewater-Based Microalgae: Progresses and Challenges. *International Journal of Hydrogen Energy* **2021**, *S0360319921037319*, doi:10.1016/j.ijhydene.2021.09.178.
103. Chader, S.; Mahmoh, B.; Chetehouna, K.; Amrouche, F.; Abdeladim, K. Biohydrogen Production Using Green Microalgae as an Approach to Operate a Small Proton Exchange Membrane Fuel Cell. *International Journal of Hydrogen Energy* **2011**, *36*, 4089–4093, doi:10.1016/j.ijhydene.2010.07.117.
104. Phunpruch S. Biomass and Biohydrogen Production by Unicellular Green Alga *Chlorella vulgaris* Var. *vulgaris* TISTR 8261 Using Frozen Food Industrial Wastewater. *Asia-Pacific Journal of Science and Technology* **2022**, *27*, 9Jan, doi:10.14456/APST.2022.19.
105. Sengmee, D.; Cheirsilp, B.; Suksaroge, T.T.; Prasertsan, P. Biophotolysis-Based Hydrogen and Lipid Production by Oleaginous Microalgae Using Crude Glycerol as Exogenous Carbon Source. *International Journal of Hydrogen Energy* **2017**, *42*, 1970–1976, doi:10.1016/j.ijhydene.2016.10.089.

106. Ban, S.; Lin, W.; Luo, J. Ca²⁺ Enhances Algal Photolysis Hydrogen Production by Improving the Direct and Indirect Pathways. *International Journal of Hydrogen Energy* **2019**, *44*, 1466–1473, doi:10.1016/j.ijhydene.2018.11.075.
107. Raheem, A.; Ji, G.; Memon, A.; Sivasangar, S.; Wang, W.; Zhao, M.; Taufiq-Yap, Y.Hin. Catalytic Gasification of Algal Biomass for Hydrogen-Rich Gas Production: Parametric Optimization via Central Composite Design. *Energy Conversion and Management* **2018**, *158*, 235–245, doi:10.1016/j.enconman.2017.12.041.
108. Onwudili, J.A.; Lea-Langton, A.R.; Ross, A.B.; Williams, P.T. Catalytic Hydrothermal Gasification of Algae for Hydrogen Production: Composition of Reaction Products and Potential for Nutrient Recycling. *Bioresource Technology* **2013**, *127*, 72–80, doi:10.1016/j.biortech.2012.10.020.
109. Jiao, J.-L.; Wang, F.; Duan, P.-G.; Xu, Y.-P.; Yan, W.-H. Catalytic Hydrothermal Gasification of Microalgae for Producing Hydrogen and Methane-Rich Gas. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* **2017**, *39*, 851–860, doi:10.1080/15567036.2016.1270375.
110. Gholkar, P.; Shastri, Y.; Tanksale, A. Catalytic Reactive Flash Volatilisation of Microalgae to Produce Hydrogen or Methane-Rich Syngas. *Applied Catalysis B: Environmental* **2019**, *251*, 326–334, doi:10.1016/j.apcatb.2019.03.082.
111. Winkler, M.; Kuhlgert, S.; Hippler, M.; Happe, T. Characterization of the Key Step for Light-Driven Hydrogen Evolution in Green Algae. *Journal of Biological Chemistry* **2009**, *284*, 36620–36627, doi:10.1074/jbc.M109.053496.
112. Chen, J.; Li, Y.; Li, M.; Shi, J.; Wang, L.; Luo, S.; Liu, H. Chemical Flocculation-Based Green Algae Materials for Photobiological Hydrogen Production. *ACS Appl. Bio Mater.* **2022**, *5*, 897–903, doi:10.1021/acsabm.1c01281.
113. Srivastava, N.; Srivastava, M.; Singh, R.; Syed, A.; Bahadur Pal, D.; Elgorban, A.M.; Kushwaha, D.; Mishra, P.K.; Gupta, V.K. Co-Fermentation of Residual Algal Biomass and Glucose under the Influence of Fe₃O₄ Nanoparticles to Enhance Biohydrogen Production under Dark Mode. *Bioresource Technology* **2021**, *342*, 126034, doi:10.1016/j.biortech.2021.126034.
114. Duangjan, K.; Nakkhunthod, W.; Pekkoh, J.; Pumas, C. Comparison of Hydrogen Production in Microalgae under Autotrophic and Mixotrophic Media. *Botanica Lithuanica* **2017**, *23*, 169–177, doi:10.1515/botlit-2017-0018.
115. Hupp, B.; Pap, B.; Farkas, A.; Maróti, G. Development of a Microalgae-Based Continuous Starch-to-Hydrogen Conversion Approach. *Fermentation* **2022**, *8*, 294, doi:10.3390/fermentation8070294.
116. Zhao, M.; Liu, Z.; Xu, J.; Liu, H.; Dai, X.; Gu, S.; Ruan, W. Dosing Effect of Nano Zero Valent Iron (NZVI) on the Dark Hydrogen Fermentation Performance via Lake Algae and Food Waste Co-Digestion. *Energy Reports* **2020**, *6*, 3192–3199, doi:10.1016/j.egyr.2020.11.200.
117. Phunpruch S. Effect of Cell Density and Nutrient Deprivation on Hydrogen Production by Unicellular Green *AlgaScenedesmus sp.* KMITL-OVG1. *Asia-Pacific Journal of Science and Technology* **2019**, *24*, 19, doi:10.14456/APST.2019.12.
118. Kim, D.-H.; Yoon, J.-J.; Kim, S.-H.; Park, J.-H. Effect of Conductive Material for Overcoming Inhibitory Conditions Derived from Red Algae-Based Substrate on Biohydrogen Production. *Fuel* **2021**, *285*, 119059, doi:10.1016/j.fuel.2020.119059.
119. Mujalin Pholchan^{1*}, K.K. Effect of Light Intensities and Atmospheric Gas Conditions on Biohydrogen Production of Microalgae Isolated from Fisheries Wastewater. *Environment and Natural Resources Journal* **2017**, *15*, 2, doi:10.14456/ENNRJ.2017.9.
120. Narravula Raga, S.; Duddela, V.; Pallaval Veera, B.; Poda, S.; Thummala, C. Effects of Various Factors on Biomass, Bioethanol, and Biohydrogen Production in Green Alga *Chlamydomonas reinhardtii*. *J App Biol Biotech* **2021**, doi:10.7324/JABB.2021.9521.

121. Nurdiawati Anissa; Zaini Ilman N; Aziz Muhammad Efficient Hydrogen Production from Algae and its Conversion to Methylcyclohexane. *Chemical Engineering Transactions* **2018**, *70*, 1507–1512, doi:10.3303/CET1870252.
122. Jokel, M.; Nagy, V.; Tóth, S.Z.; Kosourov, S.; Allahverdiyeva, Y. Elimination of the Flavodiiron Electron Sink Facilitates Long-Term H₂ Photoproduction in Green Algae. *Biotechnol Biofuels* **2019**, *12*, 280, doi:10.1186/s13068-019-1618-1.
123. Chen, J.; Li, J.; Li, Q.; Wang, S.; Wang, L.; Liu, H.; Fan, C. Engineering a Chemoenzymatic Cascade for Sustainable Photobiological Hydrogen Production with Green Algae. *Energy Environ. Sci.* **2020**, *13*, 2064–2068, doi:10.1039/D0EE00993H.
124. Elman, T.; Hoai Ho, T.T.; Milrad, Y.; Hippler, M.; Yacoby, I. Enhanced Chloroplast-Mitochondria Crosstalk Promotes Ambient Algal-H₂ Production. *Cell Reports Physical Science* **2022**, *3*, 100828, doi:10.1016/j.xcrp.2022.100828.
125. Maswanna, T.; Phunpruch, S.; Lindblad, P.; Maneeruttanarungroj, C. Enhanced Hydrogen Production by Optimization of Immobilized Cells of the Green Alga *Tetraspora* sp. CU2551 Grown under Anaerobic Condition. *Biomass and Bioenergy* **2018**, *111*, 88–95, doi:10.1016/j.biombioe.2018.01.005.
126. Paramesh, K.; Lakshmana Reddy, N.; Shankar, M.V.; Chandrasekhar, T. Enhancement of Biological Hydrogen Production Using Green Alga *Chlorococcum minutum*. *International Journal of Hydrogen Energy* **2018**, *43*, 3957–3966, doi:10.1016/j.ijhydene.2017.09.005.
127. Kumar, G.; Sivagurunathan, P.; Thi, N.B.D.; Zhen, G.; Kobayashi, T.; Kim, S.-H.; Xu, K. Evaluation of Different Pretreatments on Organic Matter Solubilization and Hydrogen Fermentation of Mixed Microalgae Consortia. *International Journal of Hydrogen Energy* **2016**, *41*, 21628–21640, doi:10.1016/j.ijhydene.2016.05.195.
128. Liu, J.-Z.; Ge, Y.-M.; Sun, J.-Y.; Chen, P.; Addy, M.; Huo, S.-H.; Li, K.; Cheng, P.-F.; Ruan, R. Exogenic Glucose as an Electron Donor for Algal Hydrogenases to Promote Hydrogen Photoproduction by *Chlorella pyrenoidosa*. *Bioresource Technology* **2019**, *289*, 121762, doi:10.1016/j.biortech.2019.121762.
129. Shetty, P.; Boboescu, I.Z.; Pap, B.; Wirth, R.; Kovács, K.L.; Bíró, T.; Futó, Z.; White, R.A.; Maróti, G. Exploitation of Algal-Bacterial Consortia in Combined Biohydrogen Generation and Wastewater Treatment. *Front. Energy Res.* **2019**, *7*, 52, doi:10.3389/fenrg.2019.00052.
130. Shobana, S.; Saratale, G.D.; Pugazhendhi, A.; Arvindnarayan, S.; Periyasamy, S.; Kumar, G.; Kim, S.-H. Fermentative Hydrogen Production from Mixed and Pure Microalgae Biomass: Key Challenges and Possible Opportunities. *International Journal of Hydrogen Energy* **2017**, *42*, 26440–26453, doi:10.1016/j.ijhydene.2017.07.050.
131. Wang, Q.; Gong, Y.; Liu, S.; Wang, D.; Liu, R.; Zhou, X.; Nghiem, L.D.; Zhao, Y. Free Ammonia Pretreatment To Improve Bio-Hydrogen Production from Anaerobic Dark Fermentation of Microalgae. *ACS Sustainable Chem. Eng.* **2019**, *7*, 1642–1647, doi:10.1021/acssuschemeng.8b05405.
132. Adnan, M.A.; Xiong, Q.; Muraza, O.; Hossain, M.M. Gasification of Wet Microalgae to Produce H₂-Rich Syngas and Electricity: A Thermodynamic Study Considering Exergy Analysis. *Renewable Energy* **2020**, *147*, 2195–2205, doi:10.1016/j.renene.2019.10.027.
133. Chen, Y. Global Potential of Algae-Based Photobiological Hydrogen Production. *Energy Environ. Sci.* **2022**, *15*, 2843–2857, doi:10.1039/D2EE00342B.
134. Manoyan, J.; Samovich, T.; Kozel, N.; Demidchik, V.; Gabrielyan, L. Growth Characteristics, Biohydrogen Production and Photochemical Activity of Photosystems in Green Microalgae *Parachlorella kessleri* Exposed to Nitrogen Deprivation. *International Journal of Hydrogen Energy* **2022**, *47*, 16815–16823, doi:10.1016/j.ijhydene.2022.03.194.
135. Skjånes, K.; Knutsen, G.; Källqvist, T.; Lindblad, P. H₂ Production from Marine and Freshwater Species of Green Algae during Sulfur Deprivation and Considerations for Bioreactor Design. *International Journal of Hydrogen Energy* **2008**, *33*, 511–521, doi:10.1016/j.ijhydene.2007.09.040.

136. Rosha, P.; Kumar, S.; Vikram, S.; Ibrahim, H.; Al-Muhtaseb, A.H. H₂-Enriched Gaseous Fuel Production via Co-Gasification of an Algae-Plastic Waste Mixture Using Aspen PLUS. *International Journal of Hydrogen Energy* **2022**, *47*, 26294–26302, doi:10.1016/j.ijhydene.2021.11.092.
137. Rai, A.; Khan, M.J.; Ahirwar, A.; Deka, R.; Singh, N.; Schoefs, B.; Marchand, J.; Varjani, S.; Vinayak, V. Hydrogen Economy and Storage by Nanoporous Microalgae Diatom: Special Emphasis on Designing Photobioreactors. *International Journal of Hydrogen Energy* **2022**, S0360319922001173, doi:10.1016/j.ijhydene.2022.01.057.
138. Xu, J.; Upcraft, T.; Tang, Q.; Guo, M.; Huang, Z.; Zhao, M.; Ruan, W. Hydrogen Generation Performance from Taihu Algae and Food Waste by Anaerobic Codigestion. *Energy Fuels* **2019**, *33*, 1279–1289, doi:10.1021/acs.energyfuels.8b04052.
139. Yagi, T.; Yamashita, K.; Okada, N.; Isono, T.; Momose, D.; Mineki, S.; Tokunaga, E. Hydrogen Photoproduction in Green Algae *Chlamydomonas reinhardtii* Sustainable over 2 Weeks with the Original Cell Culture without Supply of Fresh Cells nor Exchange of the Whole Culture Medium. *J Plant Res* **2016**, *129*, 771–779, doi:10.1007/s10265-016-0825-0.
140. Duman, G.; Uddin, M.A.; Yanik, J. Hydrogen Production from Algal Biomass via Steam Gasification. *Bioresour Technol* **2014**, *166*, 24–30, doi:10.1016/j.biortech.2014.04.096.
141. Chang, K.-L.; Lin, Y.-C.; Shangdiar, S.; Chen, S.-C.; Hsiao, Y.-H. Hydrogen Production from Dry Spirulina Algae with Downstream Feeding in Microwave Plasma Reactor Assisted under Atmospheric Pressure. *Journal of the Energy Institute* **2020**, *93*, 1597–1601, doi:10.1016/j.joei.2020.01.021.
142. Chatzitakis, A.; Nikolakaki, E.; Sotiropoulos, S.; Poulios, I. Hydrogen Production Using an Algae Photoelectrochemical Cell. *Applied Catalysis B: Environmental* **2013**, *142–143*, 161–168, doi:10.1016/j.apcatb.2013.05.011.
143. Rahmani, A.; Zerrouki, D.; Djafer, L.; Ayral, A. Hydrogen Recovery from the Photovoltaic Electroflocculation-Flotation Process for Harvesting *Chlorella pyrenoidosa* Microalgae. *International Journal of Hydrogen Energy* **2017**, *42*, 19591–19596, doi:10.1016/j.ijhydene.2017.06.123.
144. Raheem, A.; Cui, X.; Mangi, F.H.; Memon, A.A.; Ji, G.; Cheng, B.; Dong, W.; Zhao, M. Hydrogen-Rich Energy Recovery from Microalgae (Lipid-Extracted) via Steam Catalytic Gasification. *Algal Research* **2020**, *52*, 102102, doi:10.1016/j.algal.2020.102102.
145. Faraji, M.; Saidi, M. Hydrogen-Rich Syngas Production via Integrated Configuration of Pyrolysis and Air Gasification Processes of Various Algal Biomass: Process Simulation and Evaluation Using Aspen Plus Software. *International Journal of Hydrogen Energy* **2021**, *46*, 18844–18856, doi:10.1016/j.ijhydene.2021.03.047.
146. Xie, L.-F.; Duan, P.-G.; Jiao, J.-L.; Xu, Y.-P. Hydrothermal Gasification of Microalgae over Nickel Catalysts for Production of Hydrogen-Rich Fuel Gas: Effect of Zeolite Supports. *International Journal of Hydrogen Energy* **2019**, *44*, 5114–5124, doi:10.1016/j.ijhydene.2018.09.175.
147. Cheng, J.; Yue, L.; Hua, J.; Dong, H.; Li, Y.-Y.; Zhou, J.; Lin, R. Hydrothermal Heating with Sulphuric Acid Contributes to Improved Fermentative Hydrogen and Methane Co-Generation from Dianchi Lake Algal Bloom. *Energy Conversion and Management* **2019**, *192*, 282–291, doi:10.1016/j.enconman.2019.04.003.
148. Maswanna, T.; Lindblad, P.; Maneeruttanarungroj, C. Improved Biohydrogen Production by Immobilized Cells of the Green Alga *Tetraspora* sp. CU2551 Incubated under Aerobic Condition. *J Appl Phycol* **2020**, *32*, 2937–2945, doi:10.1007/s10811-020-02184-3.
149. Kruse, O.; Rupprecht, J.; Bader, K.-P.; Thomas-Hall, S.; Schenk, P.M.; Finazzi, G.; Hankamer, B. Improved Photobiological H₂ Production in Engineered Green Algal Cells. *Journal of Biological Chemistry* **2005**, *280*, 34170–34177, doi:10.1074/jbc.M503840200.
150. Cheng, J.; Yue, L.; Ding, L.; Li, Y.-Y.; Ye, Q.; Zhou, J.; Cen, K.; Lin, R. Improving Fermentative Hydrogen and Methane Production from an Algal Bloom through Hydrothermal/Steam Acid

- Pretreatment. *International Journal of Hydrogen Energy* **2019**, *44*, 5812–5820, doi:10.1016/j.ijhydene.2019.01.046.
151. Zhao, M.; Xu, J.; Xue, H.; Li, C.; Liu, H.; Gu, S.; Miao, H.; Ruan, W. Improving Hydrogen Recovery from Anaerobic Co-Digestion of Algae and Food Waste by High-Pressure Homogenisation Pre-Treatment. *Environ Chem Lett* **2021**, *19*, 3497–3504, doi:10.1007/s10311-021-01234-7.
 152. Sun, C.; Xia, A.; Liao, Q.; Fu, Q.; Huang, Y.; Zhu, X.; Wei, P.; Lin, R.; Murphy, J.D. Improving Production of Volatile Fatty Acids and Hydrogen from Microalgae and Rice Residue: Effects of Physicochemical Characteristics and Mix Ratios. *Applied Energy* **2018**, *230*, 1082–1092, doi:10.1016/j.apenergy.2018.09.066.
 153. Aziz, M. Integrated Hydrogen Production and Power Generation from Microalgae. *International Journal of Hydrogen Energy* **2016**, *41*, 104–112, doi:10.1016/j.ijhydene.2015.10.115.
 154. Kanygin, A.; Smith, A.; Nagy, V.; Tóth, S.Z.; Redding, K.E. Interplay between Hydrogen Production and Photosynthesis in a Green Alga Expressing an Active Photosystem I-Hydrogenase Chimera. *International Journal of Hydrogen Energy* **2022**, *47*, 21969–21983, doi:10.1016/j.ijhydene.2022.03.096.
 155. Alalayah, W.M.; Al-Zahrani, A.; Edris, G.; Demirbas, A. Kinetics of Biological Hydrogen Production from Green Microalgae *Chlorella vulgaris* using Glucose as Initial Substrate. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* **2017**, *39*, 1210–1215, doi:10.1080/15567036.2017.1315755.
 156. Nurdiauwati, A.; Zaini, I.N.; Irhamna, A.R.; Sasongko, D.; Aziz, M. Novel Configuration of Supercritical Water Gasification and Chemical Looping for Highly-Efficient Hydrogen Production from Microalgae. *Renewable and Sustainable Energy Reviews* **2019**, *112*, 369–381, doi:10.1016/j.rser.2019.05.054.
 157. Laokua, N.; Rittiyen, N.; Kornrawudaphikasama, Y.; Klinsalee, R.; Tonawut, Y.; Preechaphonkul, N.; Raksajit, W.; Khetkorn, W.; Dejtsakdi, W.; Maneeruttanarungroj, C. Optimal Conditions for Maximized H₂ Yield from a New Green Algal Strain *Chlorella sp.* KLSc61. *J Appl Phycol* **2022**, *34*, 1909–1919, doi:10.1007/s10811-022-02779-y.
 158. Nazarpour, M.; Taghizadeh-Alisaraei, A.; Asghari, A.; Abbaszadeh-Mayvan, A.; Tatari, A. Optimization of Biohydrogen Production from Microalgae by Response Surface Methodology (RSM). *Energy* **2022**, *253*, 124059, doi:10.1016/j.energy.2022.124059.
 159. Wang, Y.; Jiang, X.; Hu, C.; Sun, T.; Zeng, Z.; Cai, X.; Li, H.; Hu, Z. Optogenetic Regulation of Artificial MicroRNA Improves H₂ Production in Green Alga *Chlamydomonas reinhardtii*. *Biotechnol Biofuels* **2017**, *10*, 257, doi:10.1186/s13068-017-0941-7.
 160. Tamburic, B.; Zemichael, F.W.; Maitland, G.C.; Hellgardt, K. Parameters Affecting the Growth and Hydrogen Production of the Green Alga *Chlamydomonas reinhardtii*. *International Journal of Hydrogen Energy* **2011**, *36*, 7872–7876, doi:10.1016/j.ijhydene.2010.11.074.
 161. Hwang, J.-H.; Kim, H.-C.; Choi, J.-A.; Abou-Shanab, R.A.I.; Dempsey, B.A.; Regan, J.M.; Kim, J.R.; Song, H.; Nam, I.-H.; Kim, S.-N.; et al. Photoautotrophic Hydrogen Production by Eukaryotic Microalgae under Aerobic Conditions. *Nat Commun* **2014**, *5*, 3234, doi:10.1038/ncomms4234.
 162. Maliutina, K.; Tahmasebi, A.; Yu, J. Pressurized Entrained-Flow Pyrolysis of Microalgae: Enhanced Production of Hydrogen and Nitrogen-Containing Compounds. *Bioresource Technology* **2018**, *256*, 160–169, doi:10.1016/j.biortech.2018.02.016.
 163. Bechara, R.; Azizi, F.; Boyadjian, C. Process Simulation and Optimization for Enhanced Biophotolytic Hydrogen Production from Green Algae Using the Sulfur Deprivation Method. *International Journal of Hydrogen Energy* **2021**, *46*, 14096–14108, doi:10.1016/j.ijhydene.2021.01.115.
 164. Xia, A.; Jacob, A.; Tabassum, M.R.; Herrmann, C.; Murphy, J.D. Production of Hydrogen, Ethanol and Volatile Fatty Acids through Co-Fermentation of Macro- and Micro-Algae. *Bioresource Technology* **2016**, *205*, 118–125, doi:10.1016/j.biortech.2016.01.025.

165. Manoyan, J.; Gabrielyan, L.; Kozel, N.; Trchounian, A. Regulation of Biohydrogen Production by Protonophores in Novel Green Microalgae *Parachlorella kessleri*. *Journal of Photochemistry and Photobiology B: Biology* **2019**, *199*, 111597, doi:10.1016/j.jphotobiol.2019.111597.
166. Hwang, J.-H.; Lee, M.; Kang, E.H.; Lee, W.H. Renewable Algal Photo H₂ Production without S Control Using Acetate Enriched Fermenter Effluents. *International Journal of Hydrogen Energy* **2021**, *46*, 1740–1751, doi:10.1016/j.ijhydene.2020.10.082.
167. Gholkar, P.; Shastri, Y.; Tanksale, A. Renewable Hydrogen and Methane Production from Microalgae: A Techno-Economic and Life Cycle Assessment Study. *Journal of Cleaner Production* **2021**, *279*, 123726, doi:10.1016/j.jclepro.2020.123726.
168. Pewnual, T.; Jampapetch, N.; Saladtook, S.; Raksajit, W.; Klinsalee, R.; Maneeruttanarungroj, C. Response of Green Alga *Tetraspora* sp. CU2551 under Potassium Deprivation: A New Promising Strategy for Hydrogen Production. *J Appl Phycol* **2022**, *34*, 811–819, doi:10.1007/s10811-021-02672-0.
169. Melis, A.; Zhang, L.; Forestier, M.; Ghirardi, M.L.; Seibert, M. Sustained Photobiological Hydrogen Gas Production upon Reversible Inactivation of Oxygen Evolution in the Green Alga *Chlamydomonas reinhardtii*. *Plant Physiology* **2000**, *122*, 127–136, doi:10.1104/pp.122.1.127.
170. Antal, T.K.; Krendeleva, T.E.; Laurinavichene, T.V.; Makarova, V.V.; Ghirardi, M.L.; Rubin, A.B.; Tsygankov, A.A.; Seibert, M. The Dependence of Algal H₂ Production on Photosystem II and O₂ Consumption Activities in Sulfur-Deprived *Chlamydomonas reinhardtii* Cells. *Biochimica et Biophysica Acta (BBA) - Bioenergetics* **2003**, *1607*, 153–160, doi:10.1016/j.bbabi.2003.09.008.
171. Gomes, J.G.; Mitoura, J.; Guirardello, R. Thermodynamic Analysis for Hydrogen Production from the Reaction of Subcritical and Supercritical Gasification of the *C. vulgaris* Microalgae. *Energy* **2022**, *260*, 125030, doi:10.1016/j.energy.2022.125030.
172. Nguyen, A.V.; Thomas-Hall, S.R.; Malnoë, A.; Timmins, M.; Mussgnug, J.H.; Rupprecht, J.; Kruse, O.; Hankamer, B.; Schenk, P.M. Transcriptome for Photobiological Hydrogen Production Induced by Sulfur Deprivation in the Green Alga *Chlamydomonas reinhardtii*. *Eukaryot Cell* **2008**, *7*, 1965–1979, doi:10.1128/EC.00418-07.
173. Sittijunda, S.; Sitthikitpanya, N.; Plangklang, P.; Reungsang, A. Two-Stage Anaerobic Codigestion of Crude Glycerol and Micro-Algal Biomass for Biohydrogen and Methane Production by Anaerobic Sludge Consortium. *Fermentation* **2021**, *7*, 175, doi:10.3390/fermentation7030175.
174. Guan, Y.; Deng, M.; Yu, X.; Zhang, W. Two-Stage Photo-Biological Production of Hydrogen by Marine Green Alga *Platymonas subcordiformis*. *Biochemical Engineering Journal* **2004**, *19*, 69–73, doi:10.1016/j.bej.2003.10.006.
175. Homburg, S.V.; Kruse, O.; Patel, A.V. Viability, Growth, and Hydrogen Production of Green Microalgae in Novel Silica Hydrogels. *Chemie Ingenieur Technik* **2018**, *90*, 1162–1162, doi:10.1002/cite.201855064.
176. Ding, L.; Cheng, J.; Xia, A.; Jacob, A.; Voelklein, M.; Murphy, J.D. Co-Generation of Biohydrogen and Biomethane through Two-Stage Batch Co-Fermentation of Macro- and Micro-Algal Biomass. *Bioresource Technology* **2016**, *218*, 224–231, doi:10.1016/j.biortech.2016.06.092.
177. Wu, H.; Wang, H.; Zhang, Y.; Antonopoulou, G.; Ntaikou, I.; Lyberatos, G.; Yan, Q. In Situ Biogas Upgrading via Cathodic Biohydrogen Using Mitigated Ammonia Nitrogen during the Anaerobic Digestion of Taihu Blue Algae in an Integrated Bioelectrochemical System (BES). *Bioresource Technology* **2021**, *341*, 125902, doi:10.1016/j.biortech.2021.125902.
178. Sereetrakul, K.; Phunpruch, S. Factors Affecting Hydrogen Production by Unicellular Green Alga *Chlamydomonas reinhardtii* CC-125. *Chiang Mai Journal of Science* **2021**, *48*, 979–995.
179. Unpaprom, Y.; Ramaraj, R.; Whangchai, K. A Newly Isolated Green Alga, *Scenedesmus acuminatus*, from Thailand with Efficient Hydrogen Production. *Chiang Mai Journal of Science* **2017**, *44*, 1270–1278.

180. Alalayah, W.M.; Alhamed; Y.A.; Al-Zahrani, A.; Edris, G. Influence of Culture Parameters on Biological Hydrogen Production using Green Algae *Chlorella vulgaris*. *Revista de Chimie* **2015**, *66*, 788-791.
181. Hankamer B. Genetic Modification Boosts Algae Hydrogen Output. *Industrial Bioprocessing* **2007**, *29*.
182. Melis A. Genetically Engineered Algae Produce Hydrogen. *Industrial Bioprocessing* **2007**, *29*.
183. Kim, J.P.; Kang, C.D.; Sim, S.J.; Kim, M.S.; Park, T.H.; Lee, D.; Kim, D.; Pak, D. Cell Age Optimization for Hydrogen Production Induced by Sulfur Deprivation using a Green Alga *Chlamydomonas reinhardtii* UTEX 90. *Journal of Microbiology and Biotechnology* **2005**, *15*, 131-135.
184. Ghirardi, M.L.; Amos, W. Renewable Hydrogen From Green Algae. *BioCycle* **2004**, *45*, 59+62.