

Appendix I

RESEARCH OUTPUT

Peer – reviewed journal publications

The asterisk () indicates my role as corresponding author*

70. V. Faka, M. Grinieziaki, G. Kiriakidis, E. Grilla, D. Mantzavinos, A. Mao, S. Shen, Z. Frondistis, **V. Binas*** (**Corr. Author**) “Solar light induced photocatalytic degradation of sulfamethoxazole by ZnWO₄/CNNs nano-heterostructures” *Journal of Photochemistry and Photobiology A-Chemistry* (2022) **Accepted**
69. M. Moschogiannaki, E. Gagaoudakis, G. Kiriakidis, **V. Binas** (**Corr. Author**), “Effect of the deposition method and substrate on an ultra-stable CoV₂O₆ hydrogen gas sensor, operating at room temperature” *Microelectronic Engineering* (2022) **Accepted**
68. E. Georgios Varvoutis, Stamatia A. Karakoulia, Maria Lykaki, Sofia Stefa, **Vasileios Binas**, George E. Marnellos, Michalis Konsolakis, “Support-induced modifications on the CO₂ hydrogenation performance of Ni/CeO₂: The effect of ZnO doping on CeO₂ nanorod” *Journal of CO₂ Utilization* (2022) 102057
<https://doi.org/10.1016/j.jcou.2022.102057>
67. E. Christaki, E. Vasilaki, E. Gagaoudakis, **V. Binas**, M. Vamvakaki, A. Klini, “Room temperature optical detection of ultra-low ozone concentration with Photoluminescent ZnO Nanohybrids” *Sensor and Actuator B: Chemical* 359 (2022) 131614
<https://doi.org/10.1016/j.snb.2022.131614>
66. Emmanouil Gagaoudakis, Viktor Kampitakis, Marilena Moschogiannaki, Aggeliki Sfakianou, Thomas Anthopoulos, L. Tsetseris, George Kiriakidis, George Deligeorgis, Fabrice Iacovella, and **Vassilios Binas*** (**Corr. Author**), “Low-energy consumption CuSCN-based gas sensor for ultra-low concentration ozone detection, operating at room temperature” *Sensor and Actuator A: Physical* 338 (2022) 113462
<https://doi.org/10.1016/j.sna.2022.113462>
65. L. Zouridi, I. Garagounis, A. Vouros, G. Marnellos, **V. Binas*** (**Corr. Author**), “Advances in Inkjet-printed Solid Oxide Fuel Cells” *Advanced Materials Technology* (2022), 2101491
<https://doi.org/10.1002/admt.202101491>
64. Athanasios Lampropoulos, **Vassilios D. Binas**, Leila Zouridi, Costas Athanasiou, Miguel A. Montes-Morán, J. Angel Menéndez, Michalis Konsolakis, and George E. Marnellos, CO₂ Gasification Reactivity and Syngas Production of Greek Lignite Coal and Ex-Situ Produced Chars under Non-Isothermal and Isothermal Conditions: Structure-Performance Relationships *Energies* 2022, 15, 679.
<https://doi.org/10.3390/en15030679>

63. Dimitrios Kotzias, **Vassilios Binas** and George Kiriakidis, Smart Surfaces: Photocatalytic Degradation of Priority Pollutants on TiO₂-Based Coatings in Indoor and Outdoor Environments—Principles and Mechanisms, *Materials* **2022**, 15, 402. <https://doi.org/10.3390/ma15020402>
62. A. P. Souri, N. Andriagiannaki, M. Moschogiannaki, V. Faka, G. Kiriakidis, A. Malankowska, Adriana Zaleska-Medynska, **V. Binas*(Corr. Author)**, “Porous metal titanate (ATiO₃, A: Ni, Co, Mg, Zn) nanorods for toluene photooxidation in the gas phase under UV and UV-vis” *Applied Sciences* (**2021**), 11, 10850 <https://doi.org/10.3390/app112210850>
61. Viktoras Kabitakis, Emmanouil Gagaoudakis, Marilena Moschogiannaki, George Kiriakidis, Akmaral Seitkhan, Yuliar Firdaus, Hendrik Faber, Emre Yengel, George Deligeorgis, Leonidas Tsetseris, Thomas D. Anthopoulos* and **Vassilios Binas*(Corr. Author)**, “A low-power CuSCN hydrogen sensor operating reversibly at room temperature” *Advanced Functional Materials* (**2021**) 2102635 <https://doi.org/10.1002/adfm.202102635>
60. Dimitris Karanikolopoulos; Emmanouil Gagaoudakis; Sotiris Droulias; Dimitrios Louloudakis; Kyriakos Mouratis; Maria Polychronaki; Georgios E. Katsoprinakis; Elias Aperathitis; Dimitra Vernardou; **Vassilis Binas**; Constantinos Kalpouzos; George Kiriakidis; Emmanuel Koudoumas; Alexandros Lappas; Panagiotis Loukakos “Influence of Mg-doping on the ultrafast electron dynamics of VO₂ films” *Applied Physics A* (**2021**) 127:751 <https://doi.org/10.1007/s00339-021-04886-y>
59. Aikaterini Argyrou, Konstantinos Brintakis, Athanasia Kostopoulou, Emmanouil Gagaoudakis, Ioanna Demeridou, **Vassilios Binas**, George Kiriakidis, and Emmanouel Stratakis, “Ambient-processed CsPbBr₃ perovskite crystals with superior stability and sensing capability at ultra-low ozone and hydrogen concentrations” *Journal of Materiomics* (**2021**) Accepted <https://doi.org/10.1016/j.jmat.2021.07.002>
58. Xing Kang, Jinwen Shi, Huaiyu Lu, Guiquan Zhang, Jiantao Yao, Lulu Hou, Feng Chen, Samuel S. Mao, **Vassilios D. Binas**, Shaohua Shen “Nanosized BaSnO₃ as Electron Transport Promoter Coupled with g-C₃N₄ toward Enhanced Photocatalytic H₂ Production” *Advanced Sustainable Systems* (**2021**) 2100138 <https://doi.org/10.1002/adsu.202100138>
57. Athanasios Lampropoulos, **Vassilios Binas**, Michalis Konsolakis, George E. Marnellos “Steam gasification of Greek lignite and its chars by co-feeding CO₂ toward syngas production with an adjustable H₂/CO ratio” *International Journal of Hydrogen* 46 (**2021**) 28486 – 28500 <https://doi.org/10.1016/j.ijhydene.2021.06.131>
56. Georgios Varvoutis, Maria Lykaki, Sofia Stefa, **Vassilios Binas**, George E. Marnellos, Michalis Konsolakis “Deciphering the role of Ni particle size and nickel-ceria interfacial perimeter in the low-temperature CO₂ methanation reaction over remarkably active Ni/CeO₂ nanorods” *Applied Catalysis B: Environmental* 297 (**2021**) 120401 <https://doi.org/10.1016/j.apcatb.2021.120401>
55. O. Marantos, **V. Binas**, M. Moschogiannaki, E. Gagaoudakis, G. Kiriakidis, A. Klini, “Titanate (MTiO₃/PMMA) composites in photoluminescence based oxygen sensing” *Materials Science in Semiconductor Processing* 133 (**2021**) 105942

- <https://doi.org/10.1016/j.mssp.2021.105942>
54. Athanasios Paralikis, Emmanouil Gagaoudakis, Victoras Kampitakis, Elias Aperathitis, George Kiriakidis, **Vassilios Binas*** (Corr. Author), “Study on the Ozone gas sensing properties of rf-sputtered Al-doped NiO films” *Applied Sciences* 11 (2021) 3104
<https://doi.org/10.3390/app11073104>
53. Alireza Khataee, Dimitrios Kalderis, Parisa Yekan Motlagh, **Vassilios Binas**, Sofia Stefa, Michalis Konsolakis, “Synthesis of copper (I, II) oxides/hydrochar nanocomposites for the efficient sonocatalytic degradation of organic contaminants” *Journal of Industrial and Engineering Chemistry* 95 (2021) 73–82
<https://doi.org/10.1016/j.jiec.2020.12.006>
52. E. Gagaoudakis, E. Aperathitis, G. Michail, G. Kiriakidis and **V. Binas** “Thermochromic VO₂ coatings with reduced transition temperature, deposited on glass substrates by rf-sputtering technique at low temperature” *Solar Energy Materials and Solar cells* 220 (2021) 110845
<https://doi.org/10.1016/j.solmat.2020.110845>
51. V. Faka, S. Tsoumachidou, M. Moschogiannaki, G. Kiriakidis, I. Poullos, **V. Binas*** (Corr. Author), “ZnWO₄ nanoparticles as efficient photocatalyst for degradation of para-aminobenzoic acid: Impact of annealing temperature on photocatalytic performance” *Journal of Photochemistry and Photobiology A-Chemistry*, 406 (2021) 113002
<https://doi.org/10.1016/j.jphotochem.2020.113002>
50. Athanasios Lampropoulos, Nikolaos Kaklidis, Costas Athanasiou, Ana Arenillas, J. Angel Menendez, **Vassilios Binas**, Michalis Konsolakis, George E. Marnellos, “Effect of Olive Kernel thermal treatment (torrefaction vs. carbonization) on the physicochemical characteristics and the CO₂ or H₂O gasification performance of as-prepared biochars” *International Journal of Hydrogen Energy* 46 (2021) 29126-29141
<https://doi.org/10.1016/j.ijhydene.2020.11.230>
49. Danae Venieri, Dionissios Mantzavinos, **Vassilios Binas**, "Solar Photocatalysis for Emerging Micro-Pollutants Abatement and Water Disinfection: A Mini-Review" *Sustainability*, 12, 2020, 10047
doi:10.3390/su122310047
48. Sofia Stefa, Maria Lykaki, **Vasileios Binas**, Pavlos K. Pandis, Vassilis N. Stathopoulos, Michalis Konsolakis “Hydrothermal Synthesis of ZnO-doped Ceria Nanocomposites: Effect of ZnO Content on the Solid State Properties and the CO Oxidation Performance” *Applied Sciences*, 10, 2020, 7605
doi:10.3390/app10217605
47. Kotzias, D., **Binas, V.** & Kiriakidis, G. Smart Surfaces: Heterogeneous Photocatalysis on TiO₂ Based Coatings for De-pollution Purposes in Indoor and Outdoor Environments. *Top Catal*, 2020, 63:875–881
<https://doi.org/10.1007/s11244-020-01351-7>
46. M. Moschogiannaki, L. Zouridi, J. Sukunta, S. Phanichphant, E. Gagaoudakis, C. Liewhiran, G. Kiriakidis **V. Binas*** (Corr. Author), “High performance Hydrogen Gas Sensors based on PdO-decorated p-type CoV₂O₆ Nanoparticles” *Sensor and Actuator B: Chemical*, 324, 2020, 128744;
<https://doi.org/10.1016/j.snb.2020.128744>

45. Marilena Moschogiannaki, Zacharias Frontistis, George Kiriakidis, Dionissios Mantzavinos, **Vassilios Binas*** (Corr. Author), “Porous $\text{Co}_x\text{Ni}_{1-x}\text{TiO}_3$ nanorods for solar photocatalytic degradation of ethyl paraben”, *Journal of Materiomics*, **6**, **2020**, 788-799;
<https://doi.org/10.1016/j.jmat.2020.05.006>
44. Sofia Stefa, Maria Lykaki, Dimitrios Fragkoulis, **Vasileios Binas**, Pavlos Pandis, Vassilis Stathopoulos, and Michalis Konsolakis, “Effect of the Preparation Method on the Physicochemical Properties and the CO Oxidation Performance of Nanostructured $\text{CeO}_2/\text{TiO}_2$ Oxides”, *Processes* **2020**, 8(7), 847;
<https://doi.org/10.3390/pr8070847>
43. V. Kampitakis, E. Gagaoudakis, D. Zappa, E. Comini, E. Aperathitis, A. Kostopoulos, G. Kiriakidis, **V. Binas*** (Corr. Author), “Highly sensitive and selective NO_2 chemical sensors based on Al doped NiO thin films”, *Materials Science in Semiconductor Processing*, **115**, **2020**, 105149,
<https://doi.org/10.1016/j.mssp.2020.105149>.
42. E. Gagaoudakis, G. Michail, D. Katerinopoulou, K. Moschovis, E. Iliopoulos, G. Kiriakidis, **V. Binas*** (Corr. Author), E. Aperathitis, “Transparent p-type NiO:Al thin films as Room Temperature Hydrogen and Methane gas sensors” *Materials Science in Semiconductor Processing*, **2020**, 109, 104922
<https://doi.org/10.1016/j.mssp.2020.104922>
41. Gagaoudakis, Emmanouil; Panagiotopoulos, A; Maksudov, T; Moschogiannaki, M; Katerinopoulou, D; Kakavelakis, G; Kiriakidis, George; **Binas, Vassilios**; Kymakis, E; Petridis, Costantinos “Self-powered, flexible and room temperature operated solution processed hybrid metal halide p-type sensing element for efficient hydrogen detection” *Journal of Physics: Materials*, **2020**, 3 014010
<https://doi.org/10.1088/2515-7639/ab60c3>
40. Thomas Maggos, **Vassilios Binas**, Vasileios Siaperas, Antypas, Terzopoulos, Panagiotis Panagopoulos, George Kiriakidis “A promising technological approach to improve Indoor Air Quality” *Applied Sciences* (**2019**), 9, 4837;
doi:10.3390/app9224837
39. Dimitra Papadaki, Spyros Foteinis, **Vasileios Binas**, Margarita N. Assimakopoulos, Theocharis Tsoutsos and George Kiriakidis, “A life cycle assessment of PCM and VIP in warm Mediterranean climates and their introduction as a strategy to promote energy savings and mitigate carbon emissions” *AIMS Materials Science*, **2019**, 6(6): 944–959.
DOI: 10.3934/matersci.2019.6.944
38. Alireza Khataee, Dimitrios Kalderis, Peyman Gholami, Arezoo Fazli, Marilena Moschogiannaki, **Vasileios Binas**, Maria Lykaki, Michalis Konsolakis “ $\text{Cu}_2\text{O}-\text{CuO}@\text{biochar}$ composite: synthesis, characterization and its efficient photocatalytic performance” *Applied Surface Science*, **2019**, 498, 143846,
<https://doi.org/10.1016/j.apsusc.2019.143846>
37. Athanasios Tsiampalis, Zacharias Frontistis, **Vassilios Binas**, George Kiriakidis, Dionissios Mantzavinos, “Degradation of Sulfamethoxazole Using Iron-Doped Titania and Simulated Solar Radiation” *Catalysts* **2019**, 9(7), 612;
<https://doi.org/10.3390/catal9070612>

36. K. Brintakis, E. Gagaoudakis, A. Kostopoulou, V. Faka, A. Argyrou, **V. Binas**, G. Kiriakidis, E. Stratakis “Ligand-free all-inorganic metal halide nanocubes for fast, ultra-sensitive and self-powered ozone sensors” *Nanoscale Advances*, 1, **2019**, 2699-2706
DOI:10.1039/C9NA00219G
35. E. Petromichelaki, E. Gagaoudakis, K. Moschovis, T. Anthopoulos, G. Kiriakidis, **V. Binas***(**Corr. Author**), “Highly sensitive and room temperature detection of ultra-low concentrations of O₃ using self-powered sensing elements of Cu₂O nanocubes Ozone sensing by p-type Cu₂O nanocubes at Room Temperature” *Nanoscale Advances*, 1, **2019**, 2009-2017
DOI: 10.1039/C9NA00043G
34. M. Xygkis, E. Gagaoudakis, L. Zouridi, O. Markaki, E. Aperathitis, K. Chrissopoulou, G. Kiriakidis and **V. Binas*** (**Corr. Author**), “Thermochromic behavior of VO₂/polymer nanocomposites for energy saving coatings” *Coatings* (**2019**) 9, 163
doi:10.3390/coatings9030163
33. **Vassilios Binas*** (**Corr. Author**), Vassilis Stefanopoulos George Kiriakidis Panos Papagiannakopoulos, “Photocatalytic oxidation of gaseous benzene, toluene and xylene under UV and visible irradiation over Mn-doped TiO₂ nanoparticles” *Journal of Materiomics* (**2019**) 5, 56-65.
doi.org/10.1016/j.jmat.2018.12.003
32. Shwetharani, M. Sakar, C. A. N. Fernando, **Vassilis Binas** and R. Geetha Balakrishna, “Recent advances and strategies to tailor the energy levels, active sites and electron mobility in titania and its doped/composite analogues for hydrogen evolution in sunlight” *Catalysis Science & Technology* (**2019**) 9, 12-46.
DOI: 10.1039/c8cy01395k
31. Karafas, E.S., Romanias, M.N., Stefanopoulos V., **Binas V.*** (**Corr. Author**), Zachopoulos, A., Kiriakidis, G. Papagiannakopoulos, P. “Effect of metal doped and co-doped TiO₂ photocatalysts oriented to degrade indoor/outdoor pollutants for air quality improvement. A kinetic and product study using acetaldehyde as probe molecule.” *Journal of Photochemistry and Photobiology A-Chemistry* (**2019**) 371 255-263.
doi.org/10.1016/j.jphotochem.2018.11.023
30. S. Gavalas, E. Gagaoudakis, D. Katerinopoulou, V. Petromichelaki, S. Wight, G. Wotring, E. Aperathitis, G. Kiriakidis, **V. Binas***(**Corr. Author**), “Vanadium oxide nanostructured thin films prepared by Aerosol Spray Pyrolysis for gas sensing and thermochromic applications” *Material Science and Processing*, (**2019**) 89, 116-120
DOI: 10.1016/j.mssp.2018.09.008
29. Sophia Kotzamanidi, Zacharias Frontistis, **Vassilios Binas**, George Kiriakidis, Dionissios Mantzavinos, “Solar photocatalytic degradation of propyl paraben in Al-doped TiO₂ suspensions”, *Catalysis Today*, (**2018**) 313, 148-154.
doi.org/10.1016/j.cattod.2017.12.006
28. E. Aperathitis; G. Michail; M. Panagopoulou; D. Katerinopoulou; **V. Binas**; Y. S Raptis; G. Kiriakidis, “Low-Temperature rf sputtered VO₂ thin films as thermochromic coatings for smart glazing systems” *Solar Energy*, (**2018**) 165, 115-121

doi.org/10.1016/j.solener.2018.03.010

27. **V. Binas*(Corr. Author)**, D. Papadaki, Th. Maggos, A. Katsanaki, G. Kiriakidis, “Study of innovative photocatalytic cement based coatings: The effect of supporting materials” *Construction and Building Materials* (2018) 168, 923–930
doi.org/10.1016/j.conbuildmat.2018.02.106
26. G. Kakavelakis, E. Gagaoudakis, C. Petridis, V. Petromichelaki, **V. Binas**, G. Kiriakidis, and E. Kymakis, “A solution processed $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$ perovskite based self-powered ozone sensor operated at room temperature” *ACS Sensor*, 3 (2018) 135 – 142.
DOI: 10.1021/acssensors.7b00761
25. Muhammad Zahid, Evie L. Papadapoulou, **Vassilios D. Binas**, George Kiriakidis, Iosifina Gounaki, Ourania Moira, Danae Venieri, Ilker S. Bayer and Athanassia Athanassiou, “Fabrication of Visible Light-induced Antibacterial and Self-Cleaning Cotton Fabrics Using Manganese Doped TiO_2 Nanoparticles” *ACS Applied Bio Materials* 1, (2018) 1154-1164
DOI:10.1021/acsbm.8b00357
24. S. Murcia-López, M. Moschogiannaki, **V. Binas*(Corr. Author)**, T. Andreu, P-Y. Tang, J. Arbiol, J. Jacas, G. Kiriakidis, J.R. Morante “Insights into the Performance of $(\text{Co}_x\text{Ni}_{1-x})$ Titanates as Photo- and Electro-Catalysts for Sun-Driven Water Oxidation” *ACS Applied Materials & Interfaces*, 9 (2017) 40290-40297.
DOI: 10.1021/acsmi.7b12994
23. E. Gagaoudakis, E. Aperathitis, **V. Binas**, L. Zouridi, O. Markaki, G. Kiriakidis, “Transmission lines thermal switches utilizing novel phase changing materials” *IEEE* (2017), pp. 1-4, 978-1-5386-2344-2/17.
DOI: 10.1109/UPEC.2017.8231956
22. E. Gagaoudakis, G. Michail, V. Kampylafka, K. Tsagaraki, E. Aperathitis, **V. Binas**, K. Morchovis, G. Kiriakidis, “Room temperature p-type NiO thin film based sensor for hydrogen and methane detection” *Sensor Letter* 15 (2017) 663–667
<https://doi.org/10.1166/sl.2017.3864>
21. D. Katerinopoulou, K. Moschovis, E. Gagaoudakis, E. Aperathitis, **V. Binas** “A Comparable Study on ZnO-based room Temperature Ozone Sensing Characteristics Utilizing Conductometric and Surface Acoustic Waves Techniques” *Madridge Journal of Nanotechnology & Nanoscience* 2 (2017) 44
20. **V. Binas*(Corr. Author)**, A. Philippidis, A. Zachopoulos, G. Kiriakidis “Highly selective adsorption capacity of cationic dyes in reversible solid state photocatalytic sponge like materials” *Advanced Engineering Materials* 18 (2017)
DOI: 10.1002/adem.201600661
19. M. Gagaoudakis, E. Aperathitis, **V. Binas**, G. Kiriakidis, “Low temperature rf-sputtered thermochromic VO_2 films on flexible glass substrates” *Advanced Materials Letter* (2017)
DOI: 10.5185/amlett.2016.6934
18. Danae Venieri, Iosifina Gounaki, Maria Bikouvaraki, **Vassilios Binas**, Apostolos Zachopoulos, George Kiriakidis, Dionissios Mantzavinos, “Solar photocatalysis as disinfection technique: inactivation of *Klebsiella pneumoniae* in sewage and investigation of changes in antibiotic resistance profile” *Journal of Environmental Management*, 195 (2017) 140 – 147

- <https://doi.org/10.1016/j.jenvman.2016.06.009>
17. **V. Binas*** (Corr. Author), D. Venieri, D. Kotzias, G. Kiriakidis “Modified TiO₂ based photocatalysts for improved air and health quality” *Journal of Materiomics*, 3 (2017) 3-16.
<https://doi.org/10.1016/j.jmat.2016.11.002>
 16. Danae Venieri, Fanourios Tournas, Iosifina Gounaki, **Vassilios Binas**, Apostolos Zachopoulos, George Kiriakidis, Dionissios Mantzavinos, “Inactivation of Staphylococcus aureus in water by means of solar photocatalysis using metal doped TiO₂ semiconductors” *Journal of Chemical Technology & Biotechnology*, 92 (2017) 43-51.
<https://doi.org/10.1002/jctb.5085>
 15. **Binas, V.*** (Corr. Author), Kortidis, I., Gagaoudakis, E., Moschovis, K., Kiriakidis, G., “Ageing resistant Indium Oxide ozone sensing films” *Sensor Letters*, 14 (2016) 563-566
<https://doi.org/10.1166/sl.2016.3665>
 14. E. Gagaoudakis, E. Aperathitis, **V. Binas**, E. Koudoumas, K.Siderakis, G. Kiriakidis, “Study of thermochromic VO₂ material as thermal switch for power lines” *IEEE* (2016) 978-1-5090-4650-8/16.
 13. Michail, G., Kambylafka, V., Tsagaraki, K., Adroulidaki, M., Kiriakidis, G., **Binas, V.**, Modreanu, M., Aperathitis, E., “On the growth of transparent conductive oxide ternary alloys Zn–Ir–O (ZIRO) by the means of rf magnetron co-sputtering” *Thin Solid Films* 617 (2016) 3–8
<https://doi.org/10.1016/j.tsf.2016.02.002>
 12. Gagaoudakis, E., Kortidis I., Michail, G., Tsagaraki, K., **Binas, V.**, Kiriakidis, G., Aperathitis, E., “Study of low temperature rf-sputtered Mg-doped vanadium dioxide thermochromic films deposited on low-emissivity substrates” *Thin Solid Film* 601 (2016) 99-105
<https://doi.org/10.1016/j.tsf.2015.11.007>
 11. Nkosi, S.S., **Binas, V.**, Ndwandwe, O.M., Kiriakidis, G., “On the connection between photo catalytic activities and magnetic properties of TiO_{2-x} films” *Journal of Alloys and Compounds*, 654 (2016) 344-348
<https://doi.org/10.1016/j.jallcom.2015.09.069>
 10. Venieri, D., Fraggadaki, A., **Binas, V.**, Zachopoulos, A., Kiriakidis, G., Mantzavinos, D., “Study of the generated genetic polymorphisms during the photocatalytic elimination of Klebsiella pneumoniae in water” *Photochemical and Photobiological Sciences* 14 (2015) 506-513
DOI: 10.1039/c4pp00291a
 9. Venieri, D., Gounaki, I., **Binas, V.**, Zachopoulos, A., Kiriakidis, G., Mantzavinos, D. “Inactivation of MS2 coliphage in sewage by solar photocatalysis using metal-doped TiO₂” *Applied Catalysis B: Environmental* 178 (2015) 54-64
<https://doi.org/10.1016/j.apcatb.2014.10.052>
 8. Venieri, D., Fraggadaki, A., Kostadima, M., Chatzisyneon, E., **Binas, V.**, Zachopoulos, A., Kiriakidis, G., Mantzavinos, D. “Solar light and metal-doped TiO₂ to eliminate water-transmitted bacterial pathogens: Photocatalyst characterization and disinfection performance” *Applied Catalysis B: Environmental*, 154-155 (2014) 93-101

<https://doi.org/10.1016/j.apcatb.2014.02.007>

7. Kalantzopoulos, G.N., Enotiadis, A., Maccallini, E., Antoniou, M., Dimos, K., Policicchio, A., Klontzas, E., Tylanakis, E., **Binas, V.**, Trikalitis, P.N., Agostino, R.G., Gournis, D., Froudakis, G. “Hydrogen storage in ordered and disordered phenylene-bridged mesoporous organosilicas” *International Journal of Hydrogen Energy*, 39, (2014) 2104-2114
<https://doi.org/10.1016/j.ijhydene.2013.11.063>
6. **Binas, V.**, Kiriakidis, G., “Metal oxide semiconductors as visible light photocatalysts” 65 (2014) 297-302
DOI: 10.3938/jkps.65.0
5. Zacharakis, A., Chatzisyneon, E., **Binas, V.**, Frontistis, Z., Venieri, D., Mantzavinos, D., “Solar photocatalytic degradation of bisphenol a on immobilized ZnO or TiO₂” *International Journal of Photoenergy*, (2013) Article ID 570587
<http://dx.doi.org/10.1155/2013/570587>
4. Koutantou, V., Kostadima, M., Chatzisyneon, E., Frontistis, Z., **Binas, V.**, Venieri, D., Mantzavinos, D., “Solar photocatalytic decomposition of estrogens over immobilized zinc oxide” *Catalysis Today* 209 (2013) 66-73
<http://dx.doi.org/10.1155/2013/570587>
3. **V.D. Binas**, K. Sambani, T. Maggos, A. Katsanaki, G. Kiriakidis, “Synthesis and photocatalytic activity of Mn-doped TiO₂ nanostructured powders under UV and visible light” *Applied Catalysis B: Environmental* 113– 114 (2012) 79– 86.
<https://doi.org/10.1016/j.apcatb.2011.11.021>
2. G. Kiriakidis, K. Moschovis, I. Kortidis, **V.D Binas**, “Ultra-low gas sensing utilizing metal oxide thin films” *Vacuum* 86 (2012) 495-506.
<https://doi.org/10.1016/j.vacuum.2011.10.013>
1. C. Cacho, O. Geiss, J. Barrero-Moreno, **V.D. Binas**, G. Kiriakidis, L. Botalico, D. Kotzias “Studies on photo-induced NO removal by Mn-doped TiO₂ under indoor-like illumination conditions” *Journal of Photochemistry and Photobiology A: Chemistry* 222 (2011) 304– 306
<https://doi.org/10.1016/j.jphotochem.2011.04.037>

Publications Submitted under review

Submitted articles under review

63. L. Zouridi, G. Marnelos, **V. Binas* (Corr. Author)**, “Ink-jet printed SOFCs” *Advanced Materials Technology* (2021)
64. L. Zouridi, I. Garagounis, G. Marnelos, **V. Binas* (Corr. Author)**, “Inkjet Printing of Symmetric Cathode Electrodes for Solid Oxide Fuel Cells” *Advanced Materials Technology* (2021)
65. V. Faka, M. Griniezaki, G. Kiriakidis, P.Sangeetha, E. Grilla, D. Mantzavinos, Z. Frondistis, **V. Binas* (Corr. Author)** “Solar light induced photocatalytic degradation of sulfamethoxazole by ZnWO₄/CNNs nano-heterostructures” *Journal of Photochemistry and Photobiology A-Chemistry* (2021)
66. Sofia Stefa, Maria Griniezaki, Evangelia Skliri, Emmanouil Gagaouadakis, Michalis Konsolakis, Shaohua Shen, **Vassilios Binas* (Corr. Author)**, “A comparative study and physicochemical properties of bulk g-C₃N₄ and porous g-

- C₃N₄ nanosheets for environmental applications” *Journal of Materiomics* (2021)
67. Manikandan Marimuthu; **Vassilios D Binas**; Sangeetha P "Magnetic nanocomposite materials as promising heterogeneous catalysts - A Detailed Study" *Journal of Nanostructure in Chemistry* (2021)
68. Emmanouil Gagaoudakis, Viktor Kampitakis, Marilena Moschogiannaki, Thomas Anthopoulos, L. Tsetseris, George Kiriakidis and **Vassilios Binas** (Corr. Author)**, “Low-energy consumption CuSCN-based gas sensor for ultra-low concentration ozone detection, operating at room temperature” *Sensor and Actuator B: Chemical* (2021)
69. Savvas Loukidis, Themistoklis Boursianis, Giorgos Kalaitzakis, Dimitrios Tsoukleris, **Vassilios Binas**, and Thomas G. Maris “Hydrophobicity and surface protection properties of 3D printed bone by quantitative Magnetic Resonance Imaging” *Hellenic Journal of Radiology*, (2021)
70. L. Zouridi, E. Gagaoudakis, D. Dragani, E. Aperathitis, G. Kiriakidis and **V. Binas*(Corr. Author)**, “Hydrothermal synthesis of monoclinic thermochromic Vanadium dioxide VO₂(M): Effect of additives on yield, crystallinity and purity or The effect of additives on the hydrothermal synthesis of monoclinic thermochromic Vanadium dioxide VO₂(M)” *Materials Chemistry and Physics* (2021)
71. E. Christaki, E. Vasilaki, E. Gagaoudakis, **V. Binas**, M. Vamvakaki, A. Klini, “Room temperature optical detection of ultra-low ozone concentration with Photoluminescent ZnO Nanohybrids” *Sensor and Actuator B: Chemical* (2021)
72. Marilena Moschogiannaki, George Vardakis, Emmanouil Gagaoudakis, George Kiriakidis, Stefanos Papadakis, **Vassilios Binas* (Corr. Author)**, “Design and Evaluation of low-power, ultra-reliable cyber-physical air monitoring systems” *Materials Today Communication* (2021)

Patents

- ΦΩΤΟΚΑΤΑΛΥΤΙΚΗ ΣΚΟΝΗ ΑΠΟΤΕΛΟΥΜΕΝΗ ΑΠΟ ΔΙΟΞΕΙΔΙΟ ΤΟΥ ΤΙΤΑΝΙΟΥ ΚΑΙ ΔΙΟΞΕΙΔΙΟ ΤΟΥ ΜΑΓΓΑΝΙΟΥ ΠΟΥ ΕΝΕΡΓΟΠΟΙΕΙΤΑΙ ΠΑΡΟΥΣΙΑ ΥΠΕΡΙΩΔΟΥΣ ΑΚΤΙΝΟΒΟΛΙΑΣ ΚΑΙ ΟΡΑΤΟΥ ΦΩΤΟΣ**
Filing-Date 20090100724 - 30/12/2009
Granting-date 1007062 - 11/11/2010
- METHOD OF PRODUCTION OF PHOTOCATALYTIC POWDER COMPRISING TITANIUM DIOXIDE AND MANGANESE DIOXIDE ACTIVE UNDER ULTRAVIOLET AND VISIBLE LIGHT**
International Application number PCT/EP2010/070872 filing date 29.12.2010
National phase in **China**: CN patent: CN102686311B
European regional phase: **European patent**: EP2519348B1
- ΦΩΤΟΚΑΤΑΛΥΤΗΣ ΔΙΟΞΕΙΔΙΟΥ ΤΟΥ ΤΙΤΑΝΙΟΥ ΜΕ ΠΟΛΥ-ΣΤΟΙΧΕΙΑΚΕΣ ΠΡΟΣΜΙΞΕΙΣ ΚΑΙ ΜΕΘΟΔΟΣ ΠΑΡΑΣΚΕΥΗΣ ΑΥΤΟΥ**
Filing-Date 20200100173 - 03/04/2020
- PHOTOCATALYTIC TITANIUM DIOXIDE WITH MULTI-ELEMENT IMPURITIES AND PRODUCTION METHOD**
International Application number PCT/IB2020/054658

Chapters in Books

Binas, V.,* Venieri D., Kotzias D., Kiriakidis G

Chapter 18. Novel photocatalysts for indoor air clean and health environments

Photocatalytic Systems by Design, 1st edition

ISBN: 9780128205327

2020