

## **Lista de lucrări relevante – 10 publicații**

- I. Pap, Z.; Danciu, V.; Cegléd, Z.; Kukovecz, Á.; Oszkó, A.; Dombi, A.; Mogyorósi, K., The influence of rapid heat treatment in still air on the photocatalytic activity of titania photocatalysts for phenol and monuron degradation. *Appl. Catal., B* **2011**, *101* (3-4), 461-470.
- II. Karácsonyi, É.; Baia, L.; Dombi, A.; Danciu, V.; Mogyorósi, K.; Pop, L. C.; Kovács, G.; Coșoveanu, V.; Vulpoi, A.; Simon, S.; Pap, Z., The photocatalytic activity of TiO<sub>2</sub>/WO<sub>3</sub>/noble metal (Au or Pt) nanoarchitectures obtained by selective photodeposition. *Catal. Today* **2013**, *208*, 19-27
- III. Baia, L.; Vulpoi, A.; Radu, T.; Karácsonyi, T.; Dombi, A.; Hernádi, K.; Danciu, V.; Simon, S.; Norén, K.; Canton, S. E.; Kovács, G.; Pap, Z., TiO<sub>2</sub>/WO<sub>3</sub>/Au nanoarchitectures' photocatalytic activity "from degradation intermediates to catalysts' structural peculiarities" Part II: Aerogel based composites - fine details by spectroscopic means. *Appl. Catal., B* **2014**, *148-149*, 589-600
- IV. Kovács, G.; Fodor, S.; Vulpoi, A.; Schrantz, K.; Dombi, A.; Hernádi, K.; Danciu, V.; Pap, Z.; Baia, L., Polyhedral Pt vs. spherical Pt nanoparticles on commercial titanias: Is shape tailoring a guarantee of achieving high activity? *J. Catal.* **2015**, *325*, 156-167
- V. Vajda, K.; Saszet, K.; Kedves, E. Z.; Kása, Z.; Danciu, V.; Baia, L.; Magyari, K.; Hernádi, K.; Kovács, G.; Pap, Z., Shape-controlled agglomeration of TiO<sub>2</sub> nanoparticles. New insights on polycrystallinity vs. single crystals in photocatalysis. *Ceram. Int.* **2016**, *42* (2), 3077-3087
- VI. Fodor, S.; Kovács, G.; Hernádi, K.; Danciu, V.; Baia, L.; Pap, Z., Shape tailored Pd nanoparticles' effect on the photocatalytic activity of commercial TiO<sub>2</sub>. *Catal. Today* **2017**, *284*, 137-145
- VII. Fodor, S.; Baia, L.; Focşan, M.; Hernádi, K.; Pap, Z., Designed and controlled synthesis of visible light active copper(I)oxide photocatalyst: From cubes towards the polyhedrons - with Cu nanoparticles. *Appl. Surf. Sci.* **2019**, *484*, 175-183
- VIII. Hampel, B.; Hernadi, K.; Baia, L.; Pap, Z., The impact of Au nanoparticles and lanthanide-doped NaYF<sub>4</sub> on the photocatalytic activity of titania photocatalyst. *Appl. Surf. Sci.* **2021**, *547*.
- IX. Czeke, Z.; Bai, D.; Vincze, J.; Gál, E.; Réthi-Nagy, Z.; Baia, L.; Pap, Z., Commercial photocatalyst changes the behavior of *Formica pratensis* and *Formica polyctena*. *Environ. Sci.: Nano* **2022**, *10* (1), 72-79

X. Yadav, M.; Gyulavári, T.; Kiss, J.; Ábrahámné, K. B.; Efremova, A.; Szamosvölgyi, Á.; **Pap, Z.**; Sápi, A.; Kukovecz, Á.; Kónya, Z., Noble metal nanoparticles and nanodiamond modified strontium titanate photocatalysts for room temperature CO production from direct hydrogenation of CO<sub>2</sub>. *Journal of CO<sub>2</sub> Utilization* **2023**, 78.

## Teza de doctorat

*Conducător:* Prof. Dr Ionel-Cătălin Popescu, Prof. Dr. Dombi András

*Titlul tezei de doctorat:* Synthesis, morpho-structural characterization and environmental application of titania photocatalysts obtained by rapid crystallization

## Cărți și capitole în cărți

I. K. Hernádi, A. Dombi, G. Veréb, **Z. Pap** et al., “Nanotechnology for water purification”, Chapter (Ch.) 7, “Photocatalytic Water Treatment with TiO<sub>2</sub> nanoparticles” Pag. 125-179, BrownWalker Press, Florida, 2012, ISBN: 1-61233-619-1

II. K. Schrantz, E. Arany, E. Illés, E. Szabó, **Z. Pap**, et al., “Ibuprofen: Clinical Pharmacology, Medical Uses and Adverse Effects”, Ch. “Advanced Oxidation Processes for Ibuprofen Removal and Ecotoxicological Risk Assessment of Degradation Intermediates” Nova Science Publishers, Hauppauge, New York, 2013, ISBN: 978-1-62618-660-6

III. M. Baia, **Z. Pap**, et al., Ch. 7: Towards improving the functionalities of porous TiO<sub>2</sub>-Au/Ag based materials, in “Advanced Sensor and Detection Materials” (Eds. A. Tiwari/M. Demir), WILEY-Scrivener Publ., 189-223, 2014, ISBN: 978-1-118-77348-2

IV . Zs. Kása, T. Gyulavári, G. Veréb, G. Kovács, L. Baia, **Z. Pap** and K. Hernádi, Chapter 10: Novel Applications and Future Perspectives of Nanocomposites in „Nanocomposites for Visible Light-induced Photocatalysis” (Eds. M. M. Khan, D. Pradhan, Y. Sohn), Springer Nature, 333-399, 2017, ISBN: 978-3-319-62446-4

## Lista completă de publicații

1. Bajnóczi, T. G.; Balázs, N.; Mogyorósi, K.; Sránkó, D. F.; **Pap, Z.**; Ambrus, Z.; Canton, S. E.; Norén, K.; Kuzmann, E.; Vértes, A.; Homonnay, Z.; Oszkó, A.; Pálinkó, I;

- Sipos, P., The influence of the local structure of Fe(III) on the photocatalytic activity of doped TiO<sub>2</sub> photocatalysts-An EXAFS, XPS and Mössbauer spectroscopic study. *Appl. Catal., B* **2011**, *103* (1-2), 232-239.
2. Georgescu, D.; **Pap, Z.**; Baia, M.; Fort, C. I.; Danciu, V.; Melinte, G.; Baia, L.; Simon, S., Photocatalytic activity of highly porous TiO<sub>2</sub>-Ag materials. *Studia Universitatis Babes-Bolyai Chemia* **2011**, (3), 51-58.
3. **Pap, Z.**; Danciu, V.; Cegléd, Z.; Kukovecz, Á.; Oszkó, A.; Dombi, A.; Mogyorósi, K., The influence of rapid heat treatment in still air on the photocatalytic activity of titania photocatalysts for phenol and monuron degradation. *Appl. Catal., B* **2011**, *101* (3-4), 461-470.
4. **Pap, Z.**; Baia, L.; Mogyorósi, K.; Dombi, A.; Oszkó, A.; Danciu, V., Correlating the visible light photoactivity of N-doped TiO<sub>2</sub> with brookite particle size and bridged-nitro surface species. *Catal. Comm.* **2012**, *17*, 1-7.
5. **Pap, Z.**; Karácsonyi, E.; Baia, L.; Pop, L. C.; Danciu, V.; Hernádi, K.; Mogyorósi, K.; Dombi, A., TiO<sub>2</sub>/WO<sub>3</sub>/Au/MWCNT composite materials for photocatalytic hydrogen production: Advantages and draw-backs. *Physica Status Solidi (B) Basic Research* **2012**, *249* (12), 2592-2595.
6. **Pap, Z.**; Karácsonyi, É.; Cegléd, Z.; Dombi, A.; Danciu, V.; Popescu, I. C.; Baia, L.; Oszkó, A.; Mogyorósi, K., Dynamic changes on the surface during the calcination of rapid heat treated TiO<sub>2</sub> photocatalysts. *Appl. Catal., B* **2012**, *111-112*, 595-604.
7. Veréb, G.; Ambrus, Z.; **Pap, Z.**; Kmetykó, Á.; Dombi, A.; Danciu, V.; Cheesman, A.; Mogyorósi, K., Comparative study on UV and visible light sensitive bare and doped titanium dioxide photocatalysts for the decomposition of environmental pollutants in water. *Appl. Catal., A* **2012**, *417-418*, 26-36.
8. Gajda-Schrantz, K.; Arany, E.; Illés, E.; Szabó, E.; **Pap, Z.**; Takács, E.; Wojnárovits, L., Advanced oxidation processes for ibuprofen removal and ecotoxicological risk assessment of degradation intermediates. In *Ibuprofen: Clinical Pharmacology, Medical Uses and Adverse Effects*, 2013; pp 159-232.
9. Iancu, V.; Baia, M.; Diamandescu, L.; **Pap, Z.**; Vlaicu, A. M.; Danciu, V.; Baia, L., Weighting the influence of TiO<sub>2</sub> anatase/brookite ratio in TiO<sub>2</sub>-Ag porous nanocomposites on visible photocatalytic performances. *Mat. Chem. Phys.* **2013**, *141* (1), 234-239.

10. Karácsonyi, É.; Baia, L.; Dombi, A.; Danciu, V.; Mogyorósi, K.; Pop, L. C.; Kovács, G.; Coșoveanu, V.; Vulpoi, A.; Simon, S.; **Pap, Z.**, The photocatalytic activity of TiO<sub>2</sub>/WO<sub>3</sub>/noble metal (Au or Pt) nanoarchitectures obtained by selective photodeposition. *Catal. Today* **2013**, *208*, 19-27.
11. Mogyorósi, K.; Karácsonyi, É.; Cegléd, Z.; Dombi, A.; Danciu, V.; Baia, L.; **Pap, Z.**, New insights regarding the calcination as a critical parameter in the synthesis of sol-gel made titania powders. *Journal of Sol-Gel Science and Technology* **2013**, *65* (2), 277-282.
12. **Pap, Z.**; Radu, A.; Hidi, I. J.; Melinte, G.; Diamandescu, L.; Popescu, T.; Baia, L.; Danciu, V.; Baia, M., Behavior of gold nanoparticles in a titania aerogel matrix: Photocatalytic activity assessment and structure investigations. *Cuihua Xuebao/Chinese Journal of Catalysis* **2013**, *34* (4), 734-740.
13. Baia, L.; Vulpoi, A.; Radu, T.; Karácsonyi, T.; Dombi, A.; Hernádi, K.; Danciu, V.; Simon, S.; Norén, K.; Canton, S. E.; Kovács, G.; **Pap, Z.**, TiO<sub>2</sub>/WO<sub>3</sub>/Au nanoarchitectures' photocatalytic activity "from degradation intermediates to catalysts' structural peculiarities" Part II: Aerogel based composites - fine details by spectroscopic means. *Appl. Catal., B* **2014**, *148-149*, 589-600.
14. Baia, M.; Danciu, V.; **Pap, Z.**; Baia, L., Towards Improving the Functionalities of Porous TiO<sub>2</sub>-Au/Ag Based Materials. In *Advanced Sensor and Detection Materials*, 2014; Vol. 9781118773482, pp 193-227.
15. Diamandescu, L.; Tarabasanu-Mihaila, D.; Feder, M.; Enculescu, M.; Teodorescu, V. S.; Constantinescu, S.; Popescu, T.; Bartha, C.; **Pap, Z.**, Indium-tin nanoscaled oxides synthesized under hydrothermal supercritical and postannealing pathway: Phase dynamics and characterization. *Mat. Chem. Phys.* **2014**, *143* (3), 1540-1549.
16. Fort, C. I.; **Pap, Z.**; Indrea, E.; Baia, L.; Danciu, V.; Popa, M., Pt/N-TiO<sub>2</sub> aerogel composites used for hydrogen production via photocatalysis process. *Catalysis Letters* **2014**, *144* (11), 1955-1961.
17. Kovács, G.; Baia, L.; Vulpoi, A.; Radu, T.; Karácsonyi, T.; Dombi, A.; Hernádi, K.; Danciu, V.; Simon, S.; **Pap, Z.**, TiO<sub>2</sub>/WO<sub>3</sub>/Au nanoarchitectures' photocatalytic activity, "from degradation intermediates to catalysts' structural peculiarities", Part I: Aeroxide P25 based composites. *Appl. Catal., B* **2014**, *147*, 508-517.

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62. Feraru, A.; Tóth, Z. R.; Magyari, K.; **Pap, Z.**; Todea, M.; Mureşan-Pop, M.; Vodnar, D. C.; Licarete, E.; Hernadi, K.; Baia, L., Composites based on silicate bioactive glasses and silver iodide microcrystals for tissue engineering applications. *Journal of Non-Crystalline Solids* **2020**, 547.
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