Lista completă de publicații, creații, invenții

NUMELE ŞI PRENUMELE: Kovács Gábor
Șef lucrări (din 2021)

A. Teza de doctorat

Amperometric biosensors for detection of analytes of biotechnological interest (Biosenzori amperometrici pentru detecția unor analiți de interes biotehnologic); conducător de doctorat Prof. Dr. Ionel Cătălin Popescu, Facultatea de Chimie și Inginerie Chimică, Universitatea Babeș-Bolyai, Cluj-Napoca, România

(Titlul, conducătorul tezei, denumirea exactă a instituţiei unde s-a realizat, calificativul obţinut, dacă s-a publicat atunci şi datele de identificare a publicaţiei)

B. Cărti publicate

(Autor/autorii, titlul, volumul, editura, localitatea unde are sediul editura, anul, numărul de pagini totale, capitolul şi numărul de pagini ce revin autorului, ISBN.)

B1. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate la edituri recunoscute în străinătate.

Chemistry of Air Pollutants and Their Health Impacts, Autor: Gábor Kovács, Arcler Press (2025), 432 de pagini, ISBN: 9781779564139.

Green Chemistry and Sustainable Practices, Autor: Gábor Kovács, Arcler Press (2026), 381 de pagini, ISBN: 9781779569554.

B2. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate în ţară, la edituri recunoscute CNCSIS/CNCS.

B3. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate la alte edituri sau pe plan local.

B4. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate pe web.

B5. Capitole de cărţi publicate în străinătate

Kása, Z., Gyulavári, T., Veréb, G., **Kovács, G.**, Baia, L., Pap, Z., and Hernádi, K. Novel Applications and Future Perspectives of Nanocomposites, in Nanocomposites for Visible Light-induced Photocatalysis, Springer International Publishing, Cham (2017), pp 333-398, ISBN: 978-3-319-62446-4

C. Lucrări ştiinţifice publicate

(Autor/ autorii în ordinea înscrisă în publicaţie, titlul lucrării, periodicul, volumul, anul, numărul, paginile)

C1. Lucrări ştiinţifice publicate în reviste cotate ISI

1. **Kovács, G.,** and Popescu, I. C. Electrochemical behavior of cellobiose dehydrogenase from Neurospora crassa immobilized on graphite and Au-4-mercaptophenol modified electrodes, Studia Universitatis Babes-Bolyai Chemia (2011) 4(1) 199-210. (I.F.: 0,129)
2. **Kovacs, G**., Ortiz, R., Coman, V., Harreither, W., Popescu, I. C., Ludwig, R., and Gorton, L. Graphite electrodes modified with Neurospora crassa cellobiose dehydrogenase: Comparative electrochemical characterization under direct and mediated electron transfer, Bioelectrochemistry (2012) 88, 84-91. (I.F.: 3,947)
3. **Kovacs, G.**, Ortiz, R., Coman, V., Harreither, W., Popescu, I. C., Ludwig, R., and Gorton, L. Influence of Sam structure on direct electron transfer at au electrodes modified with cellobiose dehydrogenase from Neurospora crassa, Revue Roumanie de Chimie (2012) 57, 361-368. (I.F.: 0,331)
4. Karácsonyi, É., Baia, L., Dombi, A., Danciu, V., Mogyorósi, K., Pop, L. C., **Kovács, G**., Coşoveanu, V., Vulpoi, A., Simon, S., and Pap, Z. The photocatalytic activity of TiO_2/WO_3/noble metal (Au or Pt) nanoarchitectures obtained by selective photodeposition, Catalysis Today (2013) 208, 19-27. (I.F.: 3,309)
5. Baia, L., Vulpoi, A., Radu, T., Karácsonyi, T., Dombi, A., Hernádi, K., Danciu, V., Simon, S., Norén, K., Canton, S. E., **Kovács, G**., and Pap, Z. TiO_2/WO3/Au

nanoarchitectures' photocatalytic activity "from degradation intermediates to catalysts' structural peculiarities" Part II: Aerogel based composites - fine details by spectroscopic means, Applied Catalysis B: Environmental (2014) 148-149, 589-600. (I.F.: 7,435)

6. **Kovács, G.**, Baia, L., Vulpoi, A., Radu, T., Karácsonyi, T., Dombi, A., Hernádi, K., Danciu, V., Simon, S., and Pap, Z. TiO_2/WO_3/Au nanoarchitectures' photocatalytic activity, "from degradation intermediates to catalysts' structural peculiarities", Part I: Aeroxide P25 based composites, Applied Catalysis B: Environmental (2014) 147, 508-517. (I.F.: 7,435)

7. Puskelova, J., Baia, L., Vulpoi, A., Baia, M., Antoniadou, M., Dracopoulos, V., Stathatos, E., **Gabor, K**., Pap, Z., Danciu, V., and Lianos, P. Photocatalytic hydrogen production using TiO_2-Pt aerogels, Chemical Engineering Journal (2014) 242, 96-101. (I.F.: 4,321)

8. Fleaca, C. T., Scarisoreanu, M., Morjan, I., Luculescu, C., Niculescu, A. M., Badoi, A., Vasile, E., and **Kovacs, G**. Laser oxidative pyrolysis synthesis and annealing of TiO_2 nanoparticles embedded in carbon-silica shells/matrix, Applied Surface Science (2015) 336, 226-233. (I.F.: 3,15)

9. **Kovács, G**., Fodor, S., Vulpoi, A., Schrantz, K., Dombi, A., Hernádi, K., Danciu, V., Pap, Z., and Baia, L. Polyhedral Pt vs. spherical Pt nanoparticles on commercial titanias: Is shape tailoring a guarantee of achieving high activity?, Journal of Catalysis (2015) 325, 156167. (I.F.: 7,354

10. **Kovács, G.**, Pap, Z., Coteţ, C., Coşoveanu, V., Baia, L., and Danciu, V. Photocatalytic, morphological and structural properties of the TiO_2-SiO_2-Ag porous structures based system, Materials (2015) 8, 1059-1073. (I.F.: 2,728)

11. Pap, Z., Tóth, Z. R., Danciu, V., Baia, L., and **Kovács, G**. Differently shaped au nanoparticles: A case study on the enhancement of the photocatalytic activity of commercial TiO_2, Materials (2015) 8, 162-180. (I.F.: 2,728)

12. Vajda, K., Kása, Z., Dombi, A., Németh, Z., **Kovács, G**., Danciu, V., Radu, T., Ghica, C., Baia, L., Hernádi, K., and Pap, Z. "Crystallographic" holes: New insights for a beneficial structural feature for photocatalytic applications, Nanoscale (2015) 7, 5776-5786. (I.F.: 7,76)

13. Baia, L., Orbán, E., Fodor, S., Hampel, B., Kedves, E. Z., Saszet, K., Székely, I., Karácsonyi, É., Réti, B., Berki, P., Vulpoi, A., Magyari, K., Csavdári, A., Bolla, C., Coşoveanu, V., Hernádi, K., Baia, M., Dombi, A., Danciu, V., **Kovács, G**., and Pap, Z.

Preparation of TiO_2/WO_3 composite photocatalysts by the adjustment of the semiconductors' surface charge, Material Science in Semiconductor Processing (2016) 42, 66-71. (I.F.: 2,359)

14. Székely, I., **Kovács, G**., Baia, L., Danciu, V., and Pap, Z. Synthesis of shape-tailored WO_3 micro-/nanocrystals and the photocatalytic activity of WO_3/TiO_2 composites, Materials (2016) 9. (I.F.: 2,654)

15. Vajda, K., Saszet, K., Kedves, E. Z., Kása, Z., Danciu, V., Baia, L., Magyari, K., Hernádi, K., **Kovács, G.,** and Pap, Z. Shape-controlled agglomeration of TiO_2 nanoparticles. New insights on polycrystallinity vs. single crystals in photocatalysis, Ceramics International (2016) 42, 3077-3087. (2,986)

16. Fodor, S., **Kovács, G**., Hernádi, K., Danciu, V., Baia, L., and Pap, Z. Shape tailored Pd nanoparticles' effect on the photocatalytic activity of commercial TiO_2, Catalysis Today (2017) 284, 137-145. (I.F.: 4,636)

17. Gyulavári, T., Pap, Z., **Kovács, G**., Baia, L., Todea, M., Hernádi, K., and Veréb, G. Peroxo group enhanced nanorutile as visible light active photocatalyst, Catalysis Today (2017) 284, 129-136. (I.F.: 4,636)

18. Tóth, Z. R., **Kovács, G**., Hernádi, K., Baia, L., and Pap, Z. The investigation of the photocatalytic efficiency of spherical gold nanocages/TiO_2 and silver nanospheres/TiO_2 composites, Separation and Purification Technologies (2017) 183, 216-225. (I.F.: 3,359)

19. Bárdos, E., **Kovács, G**., Gyulavári, T., Németh, K., Kecsenovity, E., Berki, P., Baia, L., Pap, Z., and Hernádi, K. Novel synthesis approaches for WO_3-TiO_2/MWCNT composite photocatalysts- problematic issues of photoactivity enhancement factors, Catalysis Today (2018) 300, 28-38. (I.F.: 4.636)

20. Hampel, B., **Kovács, G.,** Czekes, Zs., Hernádi, K., Danciu, V., Ersen, O., Girleanu, M., Focsan, M., Baia, L., and Pap, Z. Mapping the photocatalytic activity and ecotoxicology of Au, Pt/TiO_2 composite photocatalysts, ACS Sustainable Chemistry and Engineering (2018) 6(10), 12993-13006. (I.F.: 6,140)

21. Tóth, Z. R., Pap Z., Danciu V., Cosoveanu V., Baia L., and **Kovács G**., Detailed investigation of phenol degradation on Au/TiO_2 composite materials, Journal of Nanoscience and Nanotechnologies (2019) 18, 1-7. (I.F.: 1.483

22. Veréb, G., Kálmán, V., Gyulavári, T, Kertész, Sz., Beszédes, S., **Kovács, G**., Hernádi, K., Pap, Zs., Hodur, C., László, Zs. Advantages of TiO_2/carbon nanotube modified

photocatalytic membranes in the purification of oil-in-water emulsions, Water Supply (2019) 19(4), 1167-1174 (I.F.: 0.900)

23. Bárdos, E., Márta, V., Baia, L., Todea, M., **Kovács, G**., Baán, K., Seema, G., Pap, Zs. and Hernádi, K. Hydrothermal crystallization of bismuth oxybromide (BiOBr) in the presence of different shape controlling agents, Applied Surface Science (2020) 518, 146184 (I.F.: 5.270)

24. Gyulavári, T., Kovács, K., Kovács, Z., Bárdos, E., **Kovács, G**., Baán, K., Magyari, K., Veréb, G., Pap, Zs. and Hernádi, K., Preparation and characterization of noble metal modified titanium dioxide hollow spheres – new insights concerning the light trapping efficiency,

Applied Surface Science (2020), 534, 147327 (I.F.: 5.270)

25. Rápó, E., Posta, K., Csavdári, A., Vincze, B.É., Mara, Gy., **Kovács, G.**, Haddidi, I. and Tonk, Sz. Performance comparison of Eichornia crassipes and Salvinia natans on azodye (Eriochrome Black T) phytoremediation, Crystals (2020) 10, 565 (I.F.: 2.404)

26. Szabó, A., **Kovács, G.**, Kovács, A., and Hernádi, K. Different pathways for synthesis of WO_3 and vertically aligned carbon nanotube-based nanostructures, Journal of Nanoscience and Nanotechnologies (2021) 21(4), 2388-2393 (I.F.: 1.483)

27. Vajda, K., Hernádi, K., Cotet, C., **Kovács, G**., Pap, Z., Shape-tailored TiO_2 photocatalysts obtained in the presence of different types of carbon materials, Journal of Nanoscience and Nanotechnologies (2021) 21(4), 2360-2367 (I.F.: 1.483)

28. Tóth, Z.R., Maity, S.K., Gyulavári, T., Bárdos, E., Baia, L., **Kovács, G.**, Garg, S., Pap, Z., Hernadi, K., Solvothermal crystallization of Ag/AgxO-AgCl composites: effect of different chloride sources/shape-tailoring agents, Catalysts (2021) 11(3), 379 (I.F.: 3.520)

29. Tóth, Z. R., Pap, Z., Kiss, J., Baia, L., Gyulavári, T., Czekes, Z., Todea, M., Magyari, K., **Kovács, G**. and Hernádi, K. Shape tailoring of AgBr microstructures: effect of the cations of different bromide sources and applied surfactants, RSC Advances (2021) 11, 9709-9720

(I.F.: 3.119)

30. Fodor, S., Baia, L., Baan, K., **Kovács, G**., Pap, Z., Hernádi, K., The effect of the reducing sugars in the synthesis of visible-light-active copper(I) oxide photocatalyst, Molecules (2021) 26(4), 1149 (I.F.: 3.267)

31. Tonk, S., Aradi, L.E., **Kovács, G.**, Turza, A., Rápó, E., Effectiveness and Characterization of Novel Mineral Clay in Cd^{2+} Adsorption Process: Linear and Non-Linear Isotherm Regression Analysis, Water (2022), 14(3), 279 (I.F.: 3.530)

32. Tóth, Z.R., Kiss, J., Todea, M., **Kovács, G.**, Gyulavári, T., Sesarman, A., Negrea, G., Vodnar, C.D., Szabó, A., Baia, L., Magyari, K., Bioactive Properties of Composites Based on Silicate Glasses and Different Silver and Gold Structures, Materials (2022), 15(5), 1655 (I.F. 3.748)

33. Tóth, Z.R., Debreczeni, D., Gyulavári, T., Székely, I., Milica, T., **Kovács, G.**, Focsan, M, Magyari, K., Baia, L., Pap, Zs., Hernádi, K., Rapid Synthesis Method of Ag_3PO_4 as Reusable Photocatalytically Active Semiconductor, Nanomaterials (2022), 13(1), 89 (I.F. 5.300)

34. Tóth, Z. R., Hernádi, K., Baia, L., **Kovács, G**. and Pap, Zs. Controlled formation of AgAgxO nanoparticles on the surface of commercial TiO_2-based composites for enhanced photocatalytic degradation of oxalic acid and phenol, Catalysis Today (2023), 424, 112969 (I.F.:5.825)

35. N.-Thi-Ha Pham, I. Kushnov, A. Farsang, B. Raucsik, Z. Tobak, **G. Kovács**, I. Babcsányi, Geochemical fractionation and environmental risk assessment of potentially toxic elements (Cu, Zn, Pb, Ni, Cr, Ba, Mn) in Tokaj vineyard soils, Hungary, Environmental Geochemistry and Health (2026), 48, 309 (I.F.: 4.3)

C2. Lucrări ştiinţifice publicate în reviste indexate în baze de date internaţionale (indicaţi şi baza de date).

C3. Lucrări ştiinţifice publicate în reviste din străinătate (altele decât cele menţionate anterior).

1) Rusu, M., **Kovács, G**., Cotet, C., Fort, I., Vulpoi, A., Baia, L., Pap Zs. and Danciu V., $NTiO_2$-Ag based porous structures: photocatalytic, morphological and structural properties, Journal of Surfaces and Interfaces of Materials (2014) 2, 305-310.

C4. Lucrări ştiinţifice publicate în reviste din ţară, recunoscute CNCSIS/CNCS (altele decât cele din baze de date internaţionale).

1). Fodor, Sz., Pap, Zs., Hernádi, K., **Kovács, G**., Baia, L., Pd és Pt nanorészecskék alakjának hatása fotokatalitikus hidrogénfejlesztés során, Acta Scientiarum Transylvanica – Múzeumi füzetek **(**2017) 25 (3), 7-16.

2) . Székely, I., Boga, B., Csavdári, A., **Kovács, G.**, Pap, Zs., Baia, M., Hernádi, K., WO_3-TiO_2 alapú félvezető nanoanyagok alkalmazása, mint fotokatalízátor színezékek eltávolítására, Acta Scientiarum Transylvanica – Múzeumi füzetek **(**2017**)** 25 (3), 44-51.

3). Tóth, Z. R., Pap Z., Hernádi, K., Baia L., and **Kovács G**., (**2017**) TiO_2 aktivitásának befolyásolása Au és Ag nanorészecskékkel és a keletkezett kompozitok fotokatalitikus aktivitásának vizsgálata, Acta Scientiarum Transylvanica – Múzeumi füzetek **(**2017) 25 (3), 36-43.

C5. Lucrări ştiinţifice publicate în reviste, altele decât cele menţionate anterior

C6. Lucrări ştiinţifice publicate în volumele manifestărilor ştiinţifice – ***cele mai relevante 10 lucrări***

(Autor/autorii în ordinea înscrisă în publicaţiei, titlul lucrării, titlul volumului, editorul sau redactorul, editura, locul, volumul, anul, paginile)

1) Kovács, G., Karácsonyi, É., Pap, Z., Baia, L, Norén, K., Dombi, A., Pop, L.C., Vulpoi, A., Radu, T., Danciu, V., Cosoveanu, V., Baia, L., Correlation of the TiO_2/WO_3/Au composites; structure with phenol photodegradation intermediates, in 4th International Conference on Semiconductor Photochemistry (SP4) (2013) Prague, Czech Republic., 35.

2) Kása, Zsolt; Vajda, Krisztina; Zsolt, Pap ; András, Dombi ; Klára, Hernádi ; Gábor, Kovács ; Virginia, Danciu ; Lucian, Baia TiO2 mikrokristályok alakjának finomhangolása különböző szénfajták segítségével XX. Nemzetközi Vegyészkonferencia Kolozsvár, Románia : Erdélyi Magyar Műszaki Tudományos Társaság (EMT) (2014) 153.

3) Kovács, G., Tóth, Z.R., Fodor, S., Pap, Z., Danciu, V., Dombi, A., Hernádi, K., Baia, L., Differently shaped Pt/Au nanoparticles: activity enhancement of commercial TiO_2 photocatalysts, in 8th European Meeting on Solar Chemistry and Photocatalysis: Environmental Applications – SPEA8 (2014), Thessaloniki, Greece, 42-43.

4) Bárdos, E., Kovács, G., Orbán, E., Gyulavári, T., Németh, K., Berki, P., Baia, L., Pap, Z., Hernádi, K. Szerves modellszennyezők lebontása TiO_2-WO_3 alapú nanokompozitok segítségével, in: MTA, Analitikai és Környezeti Kémiai Tudományos Bizottság Környezeti Kémiai Munkabizottsága - Ötödik Környezetkémiai Szimpózium (2016), 16-16.

5) Kovács, G., Szabó, A., Kovács, A., Gyulavári, T., Pap, Z., Hernádi, K., Függőlegesen rendezett szerkezetű szén nanocsövek és CNT-WO_3-alapú kompozitjainak előállítása és jellemzése / Synthesis and Characterization of Vertically Aligned Carbon Nanotubes and CNT-WO_3-based Composites, in: MAJDIK, Kornélia - XXIII. Nemzetközi Vegyészkonferencia : 23rd International Conference on Chemistry, Kolozsvár, Románia : Erdélyi Magyar Műszaki Tudományos Társaság (EMT) (2017), 101.

6) Szabó, A., Kovács, A., Gyulavári, T., Kovács, G., Pap, Z., Hernádi, K., Synthesis and characterization of vertically aligned carbon nanotubes and CNT-WO_3-based composites, in: Josef, Krysa - 5th European Conference on Environmental Applications of Advanced Oxidation Processes (EAAOP5) : Book of abstracts, Prague, Csehország : University of Chemistry and Technology (UCT) (2017) 452 p. pp. 275-275.

7) Hampel, B., Almási, E.E., Hernádi, K., Pap, Z., Czekes Z., Hernádi, K., Kovács, G. Investigations of photocatalytic activity and ecotoxicology of Au, Pt/TiO_2 composite catalysts, in: Gábor, Rákhely; Cecilia, Hodúr - II. Sustainable Raw Materials Conference Book - International Project Week and Scientific Conference, Szeged, Magyarország : University of Szeged (2019) 33-36.

8) Hampel, B., Kovács, G., Czekes Z., Hernádi, K., Baia., L., Ersen, O., Pap, Z., Correlation between photocatalytic activity and ecotoxicology of noble metal/TiO_2 nanocomposites, in: Albin, Pintar; Petar, Djinović; Janvit, Teržan; Gregor, Žerjav; Nataša, Novak Tušar: Book of Abstracts 6th European Conference on Environmental Applications of Advanced Oxidation Processes (2019) p. 336

9) Csorba, A.-B., Csíki, R., Vajda, P.-A., Kovács, G., Balog, A., Comparative study of landrace tomato cultivars from mureș county under semicontrolled conditions, 8th

Conference on Horticulture and Landscape Architecture in Transylvania, May 22-23 (2025), Târgu Mureș, Romania, p. 7.

10) Kovács, Gábor; Sztankovics, Alexandra; Oláh, Ágota; Orbán, Kincső-Katalin; Czekes, Zsolt; Babcsányi, Izabella; Molnár, Katalin, Excerpts on the ecotoxicological effects of nanomaterials used as additives in fertilizers, XXXI. International Conference on Chemistry, Sibiu, România, Erdélyi Magyar Műszaki Tudományos Társaság (EMT) (2025).

D. Traduceri de cărţi, capitole de cărţi, alte lucrări ştiinţifice

E. Editare, coordonare de volume

(Redactor/redactorii), titlul, volumul, editura, localitatea unde are sediul editura, anul, numărul de pagini, ISBN)

F. Brevete de invenții și alte titluri de proprietate

(Autor/autorii invenţiei/titlului, titlul, nr şi data, numărul şi data înregistrării, titularul)

1) Peter, A., Nicula, C., Mihaly, C.L., Mihaly, C.A., Danciu, V., Baia, G.L., **Kovács, G.,** Ciric, C., Begea, M., Craciun, L, Craciun, G., Dutuc, G., Falup, A., Ziemkowska, W., Jastrezebska, A., Kurtycz, P., Karwowska, E., Miaskiewicz-Peska, E., Zaleska-Radziwill, M, Olszyna, A., Kunicki, A., Sitarz, K., Roslov, M., Process for obtaining nanocompozite food packages, EP 3078275A1, 12.10.2016, Bulletin 2016/41; 15464006.4, 28.08.2015, Universitatea Tehnica din Cluj-Napoca, Universitatea Babeș-Bolyai, Romania, ICA Research and Development SRL, București, Romania, L&D Consulting SRL, București, Warsaw University of Technology, Poland.

RECUNOAȘTEREA

I. Premii, distincţii.

- **Distincția Paál Zoltán în Cataliză,** acordat de Comitetului de lucru în Cataliză, Academia de Științe al Ungariei**, 2018**
- **Premiul I,** acordat pentru prezentarea în plenul de doctoranzi al conferinței 14th

International Conference on Chemistry, Cluj, 2008

- **Premiul I,** acordat pentru cea mai bună prezentarea tip poster al conferinței 13th International Conference on Chemistry, Cluj, 2007

J. Citări (total/independente)

Scopus – H-index: 708/580 – 17
Web of Science: 687/617 - 17
Google Scholar: 922 – 19

K. Alte realizări semnificative

- îndrumător al 30 de lucrări de licență/master.
- îndrumător al numeroaselor lucrări studențești (de tip Științți pentru Științți sau TDK: ETDK/MTDK), dintre care 12 premii I-III și 6 mențiuni.

Data,
6 octombrie, 2026

Semnătura,
Dr. Kovács Gábor