CURRICULUM VITAE

Personal Data

Name: Ioan Balint

Date of Birth: June 1st, 1957

Nationality: Romanian

General area: Physical Chemistry

Speciality: Catalysis, Photocatalysis, Surface chemistry, Advanced materials

Institute: Institute of Physical Chemistry of the Romanian Academy

Address: Spl. Independentei 202, 77208 Bucharest 6, Romania

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Position: Senior Researcher

Education

1981 - Bachelor degree in Chemistry - Faculty of Chemistry from Bucharest

1982 - Master degree - Physical chemistry

1996, November - Ph.D. - Romanian Academy, dr. M. Vass

Language ability: English, French, Hungarian

Personal Career

1982 - 1984 - Chemist at "Institute of Nuclear Reactors", Pitesti-Romania

1984 - 1988 - Chemist at "Institute of Physical Chemistry", Bucharest

1988 - 1996 - Research fellow at "Institute of Physical Chemistry".

1996 - present - Senior researcher "Institute of Physical Chemistry".

2012 (december)-Scientific secretary of Institute of Physical Chemistry of the Romanian Academy.

Scientific Stages Abroad

1991 (Oct.) - 1992 (Aug.) - Unesco Fellow at Tokyo Institute of Technology, Japan, Laboratory of Professor Ken-ichi Aika.

1997 (Oct.) - 1998 (Jan.) - Invited professor at Tokyo Institute of Technology, Laboratory of Professor Ken-ichi Aika.

1998 (Apr.) - 1999 (Jan.) - post-doctoral fellowship at University Pierre et

Marie Marie Curie, laboratory of Professor
Jacques Fraissard.

1999 (Dec.) – 2000 (March) - Invited professor at Tokyo Institute of Technology, Laboratory of Professor Ken-ichi Aika.

2000 (May) – 2002 (May) – JSPS post-doctoral fellowship at Tokyo Institute of Technology, Laboratory of Professor Ken-ichi Aika.

2002 (July) –2005 (March) – Grant in Aid from Scientific Research from the Ministry of Education, Culture and Sport, Science and Technology, laboratory of Professor Ken-ichi Aika.

2004 (November) – 2005 (February) – Invited professor at Tokyo Technical University (Tokyo Rikka Daigaku)

Research Experience

(A) Surface Science

- Kinetics and mechanism of non-isothermal desorption of adsorbed gases from metal (Pt, Pd, Fe and Ni) supported catalysts.
- Defect chemistry of ionic oxides (MgO, Li/MgO, Ti/MgO, Zr/MgO) and zeolites (HZSM-5).
- Study of elementary steps of water gas shift reaction on the surface of simple and doped ionic oxides.
- thermoprogrammed oxidation/reduction
- study of optical active materials

(B) Catalysis/Photocatalysis

- Total oxidation of C_1-C_4 paraffin over supported platinic metals.
- Oxidative coupling of methane over simple and doped ionic oxides.
- Hydrocarbons (alkanes and alkenes) conversion (hydrogenation and oxidation) over metal (gold) supported on zeolite catalysts.
- Liquid and gas-phase conversion of COS.
- NO conversion (reduction with CH_4) over well-structured Pt nanorystals supported on alumina.

- CH_4 oxidative conversion (total and partial oxidation, oxidative coupling)
- Selective reduction of nitrate and nitrite ions in liquid phase
- photocatalytic water splitting, pollutants photomineralization, selective photo oxidation processes
- **(C) Nanomaterials**
- Preparation of nano-size oxides with high surface area and high thermal stability using microemulsion method and applications for hydrocarbon combustion.
- Preparation of well-defined nanometals by polyol method and their applications in structure sensitive reactions

Laboratory Experience

- Thermal Programmed Desorption.
- Isotope exchange reactions.
- dc, ac electrical conductivity measurements.
- Solid State Nuclear Magnetic Resonance- (^{129}Xe-NMR)
- Catalyst preparation for total and partial oxidation of hydrocarbons.
- Design and build up of the experimental systems for the study of catalysts in heterogeneous reactions.
- Production of gas sensors for combustible gases.
- Microcalorimetric measurements.
- Preparation of nano-oxides.
-Buid up of photocatalytic experimental systems

Patents

1. Catalizator si procedeu pentru tratarea apelor impurificate cu azotati si compusi organici clorurati

Authors: Bradu Corina, Capat Constantin, Papa Florica, Olaru Elena-Alina**, Balint Ioan,** State Razvan Nicolae, Frunza Ligia, Zgura Irina Elena

Brevet de inventie nr. 132035 B1, 29.11.2019

2. Biosenzor amperometric pentru determinarea continutului de tetracloretena din apa, si metoda de analiza utilizand acest biosenzor

Authors: S. C. Litescu, I. I. M. Vasilescu, G. L.Radu, I. Balint, F. Papa, R. N. State

Brevet de inventie Nr. 131151B1, 30.03.2020

Academic awards

Academic award for chemical research *Nicolae Teclu* (1987) for scientific contribution on the topic: *"Catalytic sensors for combustible gas detection".*

Others

1. Independent evaluator expert for European Union Research Program FP7-NMP-SMALL-1 : 2.2-3 "**Advanced Materials Architectures for Energy conversion**", 2007.

2. Independent evaluator expert for European Union Research Program FP7-ENERGY-NMP-2008-1: "**Novel materials for energy application**", 2008.

3. Independent evaluator expert for European Union Research Program FP7-NMP-2008-SMALL-2, NMP-2008-1.2-3 "**Development of technologies for the controlled combustion of nanoparticles**".

4. Member of National Council of Diplomas and University Certificate Attestation (CNATDCU) (30.03.2011).

Books

1. **Ioan Balint** and Akane Miyazaki,

"Nanocrystal dispersed platinum particles: preparation and catalytic properties"

Encyclopedia of nanoscience and nanotechnology, Editors: J. A. Schwarz C. Contescu and K. Putyera,Publisher: Marcel Dekker Inc., 2004, pp 2259-2268.

2. **Ioan Balint,** Akane Miyazaki,

"Leading Edge Catalysis Research; "Preparation of nanodispersed Ru Supported on γ- Al_2O_3 and its Catalytic Activity for ammonia synthesis and for methane oxidative conversion"

Editors**:** Lawrence P. Bevy; Publisher: Nova Science Publishers, Inc., 2006, pp 98-128. ISSBN 1-59454-496-4.

3. Akane Miyazaki, **Ioan Balint**

Metal nanoclusters in catalysis and material science; The issue of size control; Part B (Methodologies), Chapter 16, "Synthesis of morphologically controlled Pt nanoparticles and their application in catalytic reactions" Editors: B. Corain, G. Schmid, and N. Toshima, Elsevier 2008, pp 301-305, ISBN-13: 978-0-444-53057-8.

4. Akane Miyazaki, **Ioan Balint**: "Purification of waste water using alumina as catalysts support and as an adsorbent" in Waste Water, Edited by F. S. G. Einshlag, INTECH, Vienna, Austria, pp 277-298 (2011).

5. **Ioan Balint** and Akane Miyazaki

Dekker Encyclopedia of Nanoscience and Nanotechnology, Third Edition, Editors: J. A. Schwarz C. Contescu and K. Putyera,Publisher: Marcel Dekker Inc., 2014, pp 2259-2268

6. C. Anastasescu, M. Anastasescu, **I. Balint** and M. Zaharescu, "SiO_2-Based Materials for Immobilization of Enzymes" Nanomaterials - Toxicity, Human Health and Environment, IntechOpen_2019. DOI: http://dx.doi.org/10.5772/intechopen.87046

LIST OF PUBLICATIONS

1. **Ioan Balint**, Eugen Segal, T. Bucur and Titus Chirulescu,
"Non-isothermal kinetics in thermal desorption",
Thermochim. Acta, **67**, 103-106 (1983).

2. Mihail Vass, **Ioan Balint** and Vlad Popa,
"Methane oxidation on supported palladium catalysts",
Rev. Roum. Chim., **34**(2), 683-688 (1989).

3. Mihail Vass and **Ioan Balint**,
"Oxidative coupling of methane. Influence of reactants diffusion on the

reaction.",
Rev. Roum. Chim., **36**(4-7), 829-842 (1991).

4. **Ioan Balint** and Mihail Vass,
"Methane oxidative coupling reaction. Main features of the catalysts used in the oxidative coupling of methane.",
Rev. Chim., **44**(1), 53-56 (1993).

5. **Ioan Balint**, Ken-ichi Aika
"Study of surface dc conductivity of various MgO catalysts: Nature of defects and their role in methane activation",
Studies in Surface Science and Catalysis, 81(Natural Gas Conversion II), Eds. H. E. Curry and R. F. Howe, Elsevier Science B. V., 177-86, 1994.

6. **Ioan Balint** and Ken-ichi Aika,
"Interaction of water with 1% Li/MgO: dc conductivity of Li/MgO catalyst for methane selective activation.",
J. Chem. Soc. Faraday Trans., **91**(12), 1805-1811 (1995).

7. Ioan Balint and Mihail Vass,
"Investigation of 5% K/BaO_2 catalytic system in methane oxidative coupling reaction"
Rev. Roum. Chim., **42**(10), 1009-1017 (1997).

8. **Ioan Balint** and Ken-ichi Aika,
"The defect chemistry of lithium-doped magnesium oxide"
J. Chem. Soc. Faraday Trans., **93**, 1797-1801 (1997).

9. Mihail Vass, **Ioan Balint** and Ken-ichi Aika,
"The defect chemistry of MgO"
Rev. Roum. Chim., **43**(5), 367-376, 1998.

10. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika
"The alumina dissolution promoted by $CuSO_4$ precipitation"
Chem. Mater., **11**(2), 378-383, 1999.

11. **Ioan Balint**, Marie-Anne Springuel-Huet, Ken-ichi Aika and Jacques Fraissard,
"Evidence for oxygen vacancy formation in HZSM-5 at high temperature"

Phys. Chem. Chem. Phys., **1**, 3845-3851, 1999.

11b. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
Alumina dissolution promoted by the adsorption of Cu(II) ion.
Proceeding of the Annual Meeting of the Geochemical Society of Japan, p 208, 1999 (Japanese).

12. **Ioan Balint** and K. Aika,
Temperature-programmed desorption study of water-gas shift and methane steam reforming reactions over Li/MgO catalyst
Appl. Catal. A: General, **196**(2), 209-215, 2000.

13. **Ioan Balint** and Ken-ichi Aika,
"Specific defect sites creation by doping MgO with lithium and titanium"
Applied Surf. Sci., **173** (3-4), 296-306, 2001.

14. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"Alumina dissolution during impregnation with $PdCl_4^{2-}$ in acid pH range"
Chem. Mater., **13**(3), 932-938, 2001.

15. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"NO reduction by CH_4 over well-structured Pt nanocrystals supported on γ-Al_2O_3"
Chem. Lett., (10), 1024-1025, 2001. (ISSN:0366-7022)

16. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"NO reduction by CH_4 over well-structured Pt nanocrystals supported on γ-Al_2O_3"
88th CATSJ Meeting Abstracts: No 2 A05
Catalysts & Catalysis, **43**(6), 419-421, 2001.

17. Akane Miyazaki, **Ioan Balint,** Ken-ichi Aika and Yoshio Nakano,
"Preparation of high activity catalyst for ammonia synthesis by supporting well-defined Ru nanoparticles on γ-Al_2O_3"
Chem. Lett., (12), 1332, 2001

18. Akane Miyazaki, **Ioan Balint,** Ken-ichi Aika and Yoshio Nakano,
"Preparation of Ru nanoparticles supported on γ-Al_2O_3 and its novel catalytic activity for ammonia synthesis"
J. Catal., **204**, 364-371, 2001.

19. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"The catalytic activity of the alumina supported Ru nanoparticles for NO/CH_4 reaction"
Chem. Commun. (6), 630-631, 2002.
20. **Ioan Balint**, Zhixiong You, and Ken-ichi Aika,
"Microemulsion mediated preparation of high thermal stability alumina nanoparticles stabilized with variable amounts of barium"
Catalysts & Catalysis, **44** (2), 149-151, 2002.
21. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"NO reduction by CH_4 over well-structured Pt nanocrystals supported on γ-Al_2O_3"
Appl. Catal. B, **37** (3), 217-229, 2002.
22. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"Methane reaction with NO over alumina supported Ru nanoparticles"
J. Catal. **207** (1), 66-75, 2002.
23. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"Investigation of the morphology-catalytic reactivity relationship for the Pt nanoparticles supported on alumina by using the reduction of NO with CH_4 as a model reaction"
Chem. Commun., (10), 1044-1045, 2002.
24. **Ioan Balint**, Zhixiong You and Ken-ichi Aika
"Morphology and oxide phase control in the microemulsion mediated synthesis of barium stabilized alumina nanoparticles"
Phys. Chem. Chem. Phys., **4**, 2501 – 2503, 2002.
25. Zhixiong You**, Ioan Balint**, and Ken-ichi Aika
"Synthesis of thermally stable Cs-doped alumina nanoparticles by microemulsion method"
Chem. Lett., (11), 1090-1091, 2002.
26. Akane Miyazaki, Ken-ichi Aika, Yoshio Nakano and **Ioan Balint**
"Cubic platinum nano particle effective for waste gas catalyst"
Engineering Materials (Kogyo Zairyo), **50** (10), 41 – 44, 2002. (jp).

27. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika,
"NO reduction by CH_4 over well-structured Pt nanocrystals supported on γ-Al_2O_3" Studies in Surface Science and Catalysis; vol. 145; Science and Technology in Catalysis 2002; Ed. M. Anpo, M. Onaka, H. Yamashita; Publisher: Kodansha, Elsevier, Tokyo 2003, p 239-242.
28. Zhixiong You**, Ioan Balint**, and Ken-ichi Aika
"Mesostructured alumina nanocomposites synthesis via reverse microemulsion route" Chem. Lett., **32** (7), 630-631, 2003.
29. **Ioan Balint**, Akane Miyazaki, Ken-ichi Aika
"The relevance of Ru nanoparticles morphology and oxidation state to the partial oxidation of methane"
J. Catal., **220** (1), 74-83, 2003.
30. Akane Miyazaki, **Ioan Balint,** Ken-ichi Aika and Yoshio Nakano,
"Solid-liquid interfacial reaction of Zn^{2+} ions on the surface of amorphous aluminosilicates with various Al/Si ratios"
Geochim. Cosmochim. Acta, **67**(20), 3833-3844, 2003.
31. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika
"Chemical and morphological evolution of the supported Ru nanoparticles during oxidative conversion of methane."
React. Kinet. Catal. Lett. **80**(1), 81-87, 2003.
32. Akane Miyazaki, **Ioan Balint** and Yoshio Nakano,
"Morphology control of Pt nanoparticles and their catalytic properties."
J. Nanoparticles Res., **5** (1-2), 69-80, 2003.
33. Akane Miyazaki, Kazumasa Shibazaki, Yoshio Nakano, Mitsuteru Ogawa, **Ioan Balint**
"Efficient catalytic reduction of concentrated nitric acid on the adsorption sites of activated carbon"
Chem. Lett., **33** (4), 418-419, 2004.
34. **Ioan Balint**, Akane Miyazaki
"NO/CH_4 reaction over nanodispersed Pt particles"

Topics in Catalysis., **30/31**, 123-126, 2004.

35. **Ioan Balint**, Akane Miyazaki and Ken-ichi Aika
"Effect of platinum morphology on lean reduction of NO with C_3H_6"
Phys. Chem. Chem. Phys., **6** (9), 2000 – 2002, 2004.

36. Zhixiong You, **Ioan Balint**, Ken-ichi Aika
"Catalytic combustion of methane over microemulsion-derived MnO_x–Cs_2O–Al_2O_3 nanocomposites"
Applied Catalysis B: **53**(4), 233–244, 2004.

37. **Balint, Ioan**; Miyazaki, Akane; Aika, Ken-ichi
"The chemical state of the Ru nanoparticles during partial oxidation of methane"
Annals of West University of Timisoara, Series of Chemistry, **12**(3, Pt. 4), 1325-1344, 2003.

38. Akane Miyazaki, Shuichiro Yoshida, Yoshio Nakano and **Ioan Balint,**
"Preparation of tetrahedral Pt nanoparticles having {111} facet on their surface"
Chem. Lett., **43** (1), 74-75, 2005.

39. **Ioan Balint**, Akane Miyazaki, Ken-ichi Aika,
"Kinetic aspects associated with the lean reduction of NO with C_3H_6 over well-structured Pt nanocrystals"
React. Kinet. Catal. Lett., **85** (1), 189-196, 2005.

40. **Ioan Balint**, Akane Miyazaki, Ken-ichi Aika,
"On the kinetic and structure sensitivity of lean reduction of NO with C_3H_6 over nanodispersed Pt crystals"
Appl. Catal. B, **59**, 72-81, 2005.

41 . Dana Gingasu, Luminita Patron, Ioana Mindru, Nicolae Stanica, **Ioan Balint**,
"Copper ferrite prepared by the soft chemical method"
Rev. Roumaine Chim., **49**(8), 669-674, 2004.

42. Zhixiong You, Koji Inazu, **Ioan Balint** and Ken-ichi Aika,
"Barium hexaaluminate as a novel promising support for ruthenium-based ammonia synthesis catalysts"
Chem. Lett., **34** (5), 692-693, 2005.

43. Luminita Patron, Oana Carp, Ioana Mandru, G. Marinescu, Nicolae Stanica and **Ioan Balint**
"Polynuclear coordination precursor compounds for $M_3Fe_5O_{12}$ garnets (M = Y, Eu, Er, Gd). Part I. Synthesis of precursors.
J. Serb. Chem. Soc., **70** (8-9), 1049-1056, 2005.

44. Akane Miyazaki, M. Asakawa, **Ioan Balint**,
"Nitrite reduction on the morphologically controlled Pt nanoparticles"
Chem. Com., **44**, 3730-3732, 2005.

45. Akane Miyazaki, Kazumasa Shibazaki; **Ioan Balint**
"The effect of active carbon on the reduction of concentrated nitric acid by HCOOH"
J. Coll. Interface Sci., **293** (1), 43-51, 2006.

46. Dana Gingasu, Luminita Patron, Ioana Mandru, **Ioan Balint**, Nicolae Stanica,
"Lithium ferrite from polynuclear coordination compounds with glycine as ligands"
Rev. Roumaine Chim., **50** (11-12), 2005.

47. Dana Gingasu, Ioana Mandru, Luminita Patron, Oana Carp, Dorina Matei, Cristian Neagoe, **Ioan Balint**
"Copper ferrite obtained by two soft chemistry routes"
J. Alloy. Comp., **425**, 357-361, 2006.

48. Gabriela Marinescu, Luminita Patron, Daniela C. Culita, Cristian Neagoe, Costinel I. Lepadatu, **Ioan Balint**, Lofti Bessais, Corneliu B. Cizmas
"Synthesis of magnetite nanoparticles in the presence of aminoacids"
Journal of Nanoparticles Research, **8**, 1045-1051, 2006.

49. Daniela C. Culita, Luminita Patron, Valentin S. Teodorescu, **Ioan Balint**
"Synthesis and characterization of spinelic ferrites obtained from coordination compounds as precursors"
Journal of Alloy and Compounds **432**(1-2), 211-216, 2007.

50. **Ioan Balint**, Akane Miyazaki,
"Minimization of metal-support interaction by using Ru nanoparticles for ammonia synthesis"
Transaction of the Materials Research Society of Japan, **32** (2), 387-390, 2007.

51. **Ioan Balint**, Akane Miyazaki,

"The influence of Rh addition on the catalytic activity of cubic Pt nanocrystals supported on alumina for NO/CH_4"

Catal. Lett., **122** (1-2), 183-187, 2008.

52. Flori Papa, Luminita Patron, Oana Carp, Carmen Paraschiv, **Balint Ioan**

"Catalytic activity of neodymium substituted zinc ferrites for oxidative conversion of methane"

J. Mol. Catal., **299** (1-2), 93-97, 2009.

53. **Ioan Balint**, Akane Miyazaki,

"Novel preparation method of well-defined mesostructured nanoaluminas via carbon-alumina composites"

Microporous and mesoporous materials, **122,** 216-222, 2009.

54. Akane Miyazaki, Toru Asakawa and **Ioan Balint**

"NO_2^- adsorption onto denitration catalysts"

Appl. Catalysis A, **363**, 81-85 (2009).

55. Crina Anastasescu, Maria Zaharescu, **Ioan Balint**

"Unexpected photocatalytic activity of simple and platinum modified tubular SiO_2 for the oxidation of oxalic acid to CO_2"

Catal. Lett., **132** (1-2), 81-86, 2009.

56. Florica Papa, Dana Gingasu, Luminita Patron, Akane Miyazaki, **Ioan Balint**

"On the nature of active sites and catalytic activity for OCM reaction of alkaline-earth oxides-neodymia catalytic systems"

Appl. Catal. A, **375** (1), 172–178, 2010.

57. Florica Papa, Luminita Patron, Oana Carp, Carmen Paraschiv, **Ioan Balint**

"Catalytic activity of neodymium substituted zinc ferrites for oxidative conversion of methane"

Rev. Roum. Chim., **55** (1), 27-32, 2010.

58. Akane Miyazaki, Toru Asakawa, **Ioan Balint**

"Reply to the comments on "NO_2^- adsorption onto denitration catalysts""

Appl. Catal. A, **380**, 186, 2010.

59. F. Papa, D. Gingasu, L. Patron, A. Miyazaki, **Ioan Balint**

"Impact of the catalyst basicity on the mechanism of OCM reaction performed over alkaline earth-Nd_2O_3 mixed oxides"
Rev. Roum. Chim., 56 (3), 203-208, 2011.

60. F. Papa, C. Negrila, G. Dobrescu, A. Miyazaki, **Ioan Balint**
"Preparation, characterization and catalytic behavior of Pt-Cu nanoparticles in methane combustion"
Journal of Natural Gas Chemistry, 20, 537-542, 2011.

61. Florica Papa, Patron Luminita, Petre Osiceanu, Ruxandra Barjega, Miyazaki Akane, **Ioan Balint**
"Acid-base properties of the active sites responsible for C_2^+ and CO_2 formation over MO-Sm_2O_3 (M=Zn, Mg, Ca and Sr) mixed oxides in OCM reaction"
J. Mol. Catal., **346** 46-54, 2011.

62. Florica Papa, Catalin Negrila, Akane Miyazaki, **Ioan Balint**
"Morphology and chemical state of PVP-protected Pt, Pt-Cu and Pt-Ag nanoparticles prepared by alkaline polyol method"
Journal of Nanoparticle Research, **13**(10) 5057-5064, 2011.

63. **Ioan Balint**, Akane Miyazaki, Dana Gingasu and Florica Papa
"Relevance of MO-Sm_2O_3 (M= Zn, Mg, Ca, Sr) mixed oxides basicity on the efficiency of methane conversion to C_2^+ hydrocarbons"
Reaction Kinetics, Mechanisms and Catalysis, **105**(1), 5-11, 2012.

64. Dobrescu, G., Papa, F., Fangli, I., **Balint Ioan**,
"Morphology and structure by fractal analysis of Pt-Cu nanoparticles"
Applied Computing Conference - Proceedings , pp. 67-70, 2010.

65. Crina Anastasescu, Mihai Anastasescu, Maria Zaharescu, **Ioan Balint**
"Platinum-modified SiO_2 with tubular morphology as efficient membrane-type microreactors for mineralization of formic acid"
Journal of Nanoparticle Research, **14**(10), 1198-1209, 2012.

66. Miyazaki Akane, **Balint Ioan,**

"Evidence for tetrahedral AlO_4 formation induced by Zn^{2+} adsorption onto $Al(OH)_3$ gel"
Colloids and Surfaces A: Physicochemical and Engineering Aspects, **420**, 115– 121, 2013.

67. Diana Visinescu, Florica Papa, Adelina C. Ianculescu, **Ioan Balint**, Oana Carp
"Nickel-doped zinc aluminate oxides: starch-assisted synthesis, structural, optical properties, and their catalytic activity in oxidative coupling of methane
J. Nanopart. Res. 15:1456, 2013.

68. Raluca Dumitru, Florica Papa, **Ioan Balint**, Daniela C. Culita, Cornel Munteanu, Nicolae Stanica, Adelina Ianculescu, Lucian Diamandescu, Oana Carp
"Mesoporous cobalt ferrite: A rival of platinum catalyst in methane combustion reaction"
Applied Catalysis A: General, 467, 178-185, 2013.

69. Florica Papa, Akane Miyazaki, Mariana Scurtu, Adelina C. Ianculescu, **Ioan Balint**
"Morphology, chemical state of nanometric-sized Pt–Cu and Pt–Ag particles, and their photocatalytic activity for mineralization of methanol"
J. Nanopart. Res. 16:2249, 2014.

72. F. Papa, **I. Balint**, C. Negrila, Elena O., I. Zgura, C. Bradu,
"Supported Pd-Cu nanoparticles for water phase reduction of nitrates. Influence of the support and of the pH conditions"
Ind. & Eng. Chem. Res., **53**, 19094−19103, 2014.

70. G. Dobrescu, F. Papa, R. State, I. Fangli, **I. Balint**
"Particle size distribution of Pt-Cu bimetallic nanoparticles by fractal analysis"
Powder Technology, **269**, 532-540, 2015.

71. Akane Miyazaki, Kahori Matsuda, Florica Papa, Mariana Scurtu, Catalin Negrila, Gianina Dobrescu, **Ioan Balint**
"Impact of particle size and metal-support interaction on denitration behavior of well-defined Pt-Cu nanoparticles"
Catal. Sci. & Technology, **5** (1), 492 - 503, 2015.

73. R. State, F. Papa, G. Dobrescu, C. Munteanu, I. Atkinson, **Ioan Balint**, A. Volceanov
"Green synthesis and characterization of gold nanoparticles obtained by a direct reduction method and their fractal dimensions"

Environmental Engineering and Management Journal, **14**, 587-593, 2015.

74. C. Anastasescu, N. Spataru, D. Culita, I. Atkinson, T. Spataru, V. Bratan, C. Munteanu, M. Anastasescu, C. Negrila, **I. Balint**

" Chemically assembled light harvesting CuO_x-TiO_2 p-n heterostructures"

Chem. Eng. J., **281**, 303-311, 2015.

75. I. Stanciu, L. Predoana, C. Anastasescu, D. C. Culita, S. Preda, J. Pandele Cusu, C. Munteanu, A. Rusu, **I. Balint**, M. Zaharescu

"Structure and properties of vanadium doped TiO_2 powders prepared by sol-gel method"

Rev. Roum. Chim. **59**, 919-929, 2014.

76. R. State, F. Papa, C. Munteanu, **I. Balint**, A. Ion, A. Volceanov,

"Synthesis and characterization of PVP (polyvinyl pyrrolidone) stabilized gold nanoparticles"

Romanian J. Mat., **45** 262 -266, 2015.

77. D. Visinescu, M. Scurtu, R. Negrea, R. Birjega, D. C. Culita, M. C. Chifiriuc, C. Draghici, J. C. Moreno, A. M. Musuc, **I. Balint** and O. Carp

"Additive-free 1,4-butanediol mediated synthesis: a suitable route to obtain nanostructured, mesoporous spherical zinc oxide materials with multifunctional properties"

RSC Adv., **5**, 99976–99989, 2015.

78. A. Vasile, M. Scurtu, C. Munteanu, M. Teodorescu, M. Anastasescu, **I. Balint**,

"Synthesis of well-defined Pt nanoparticles with controlled morphology in the presence of new types of termosensitive polymers"

Proc. Safety Environment Protection, **108**, 144-152, 2017.

79. C. Anastasescu, M. Zaharescu, D. Angelescu, C. Munteanu, V. Bratan, T. Spataru, Catalin Negrila, Niculae Spataru, **I. Balint**

"Defect-related light absorption, photoluminiscence and photocatalytic activity of SiO_2 with tubular morphology"

Sol. Energy Mater. Sol. Cells 159, 325–335, 2017.

80. T. Spătaru, T. Kondo, C. Anastasescu, **I. Balint**, P. Osiceanu, C. Munteanu, N. Spătaru, A. Fujishima

"Silica veils-conductive diamond powder composite as a new propitious substrate for platinum electrocatalysts"
J. Solid State Electrochem., 21, 1007-1014, 2017.

81. R. N State; F. Papa; T. Tabakova; I. Atkinson; C. Negrila; **I. Balint**
"Photocatalytic abatement of trichlorethylene (TCE) over Au and Pd-Au supported on TiO_2 by combined photomineralization/hydrodechlorination reactions under simulated solar irradiation"
J. Catal., **346**, 101–108, 2017.

82. R. State, M. Scurtu, A. Miyazaki, F. Papa, I. Atkinson, C. Munteanu, **I. Balint**
"Influence of metal-support interaction on nitrate hydrogenation over Rh and Rh-Cu nanoparticles dispersed on Al_2O_3 and TiO_2 supports"
Arabian J. Chem., **10**, 975-984, 2017.

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