ARETI A. LEONTIOU

Laboratory Teaching Staff
Department of Food Science & Technology
University of Patras

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Academic Titles

- BSc in Chemistry, Department of Chemistry, University of Ioannina, 2000
- PhD in Chemical Technology, Department of Chemistry, University of Ioannina, 2004

Thesis: Heterogeneous pepovskite type mixed oxides of iron and manganese.

Research Interests

- Composition of innovative nanocomposing polymer materials with applications in food packaging.
- Composition and characterisation of mixed perovskite oxides and study of catalytic activity in reactions of environmental interest.

Academic Experience

- **Laboratory Teaching Staff (EDIP),** Discipline: **Chemical Technology**, Department of Food Science & Technology, University of Patras (July 2022-today).
- **Laboratory Teaching Staff (EDIP),** Discipline: Chemical Technology, Department of Business Administration of Food and Agricultural Enterprises, University of Patras (May 2014-July 2022).
- **Laboratory Teaching Assistant,** Food Technology Laboratory, Department of Business Administration of Food and Agricultural Enterprises, University of Patras (April 2013-May 2014).
- **Chemist,** Department of Business Administration of Food and Agricultural Enterprises, University of Patras (July 2006-April 2013).

Teaching

- **2014-2022 (Department of Business Administration of Food and Agricultural Enterprises):**
  - General Chemistry - laboratory
  - Food Safety - laboratory
  - Chemistry & Food Technology - laboratory
- **2019-2020 (Department of Business Administration of Food and Agricultural Enterprises):**

  - Organic chemistry - theory (co-teaching)
- 2021-2022 (Department of Food Science & Technology):
  - General & Inorganic Chemistry - laboratory
  - Instrumental Food Analysis - laboratory
  - Organic Chemistry - laboratory
  - Food Techology - laboratory
  - Food Additives – theory & laboratory
- 2022-today (Department of Food Science & Technology):
  - Instrumental Food Analysis - laboratory
  - Food Packaging - laboratory
  - Food Processing and Preservation Technologies - laboratory
  - Food Additives - laboratory
  - Nanotechnology & Biomaterials in Food Production – laboratory
  - Technology & Quality Control of Food of Animal Origin I - theory (co-teaching) (2023-today)
  - Technology & Quality Control of Food of Animal Origin II – theory & laboratory (co-teaching) (2023-today)

Supervision

- Supervision of 40 undergraduate theses (2017-2023).
- Co-supervision of more than 50 undergraduate theses (2017-2023).

phD Thesis

- Leontiou Areti. Heterogeneous pepovskite type mixed oxides of iron and manganese. Department of Chemistry, University of Ioannina. 2004. National Archive of phD Theses No. 20173. http://hdl.handle.net/10442/hedi/20173

Publications

- Salmas, Constantinos E; Giannakas, Aris E; Karabagias, Vassilios K; Moschovas, Dimitrios; Karabagias, Ioannis K; Gioti, Christina; Georgopoulos, Stavros; Leontiou, Areti; Kehayias, George; Avgeropoulos, Apostolos. Development and Evaluation of a Novel-Thymol@ Natural-Zeolite/Low-Density-Polyethylene Active Packaging Film: Applications for Pork Fillets Preservation. Antioxidants 2023, 12(2) 523. https://doi.org/10.3390/antiox12020523

- Leontiou, Areti; Georgopoulos, Stavros; Karabagias, Vassilios K; Kehayias, George; Karakassides, Anastasios; Salmas, Constantinos E; Giannakas, Aris E. Three-Dimensional Printing Applications in Food Industry. Nanomanufacturing 2023, 3(1), 91-112. https://doi.org/10.3390/nanomanufacturing3010006

- Giannakas, A.E.; Karabagias, V.K.; Moschovas, D.; Leontiou, A.; Karabagias, I.K.; Georgopoulos, S.; Karydis-Messinis, A.; Zaharioudakis, K.; Andritsos, N.; Kehayias, G.; et al. Thymol@activated Carbon Nanohybrid for Low-Density Polyethylene-Based Active Packaging Films for Pork Fillets' Shelf-Life Extension. Foods 2023, 12, 2590. https://doi.org/10.3390/foods12132590

- Salmas, C.E.; Kollia, E.; Avdylaj, L.; Kopsacheili, A.; Zaharioudakis, K.; Georgopoulos, S.; Leontiou, A.; Katerinopoulou, K.; Kehayias, G.; Karakassides, A.; et al. Thymol@Natural

Zeolite Nanohybrids for Chitosan/Polyvinyl-Alcohol-Based Hydrogels Applied as Active Pads. Gels 2023, 9, 570. https://doi.org/10.3390/gels9070570

- Kechagias, Achilleas; Lykos, Christos; Karabagias, Vassilios K; Georgopoulos, Stavros; Sakavitsi, Viktoria; Leontiou, Areti; Salmas, Constantinos E; Giannakas, Aris E; Konstantinou, Ioannis. Development and Characterization of N/S-Carbon Quantum Dots by Valorizing Greek Crayfish Food Waste. Appl. Sci. 2023, 13(15), 8730. https://doi.org/10.3390/app13158730
- Salmas, Constantinos E; Leontiou, Areti; Kollia, Eleni; Zaharioudakis, Konstantinos; Kopsacheili, Anna; Avdylaj, Learda; Georgopoulos, Stavros; Karabagias, Vassilios K; Karydis-Messinis, Andreas; Kehayias, George. Active Coatings Development Based on Chitosan/Polyvinyl Alcohol Polymeric Matrix Incorporated with Thymol Modified Activated Carbon Nanohybrids. **Coatings** 2023, **13**(9), 1503. https://doi.org/10.3390/coatings13091503
- Giannakas, Aris E; Zaharioudakis, Konstantinos; Kollia, Eleni; Kopsacheili, Anna; Avdylaj, Learda; Georgopoulos, Stavros; Leontiou, Areti; Karabagias, Vassilios K; Kehayias, George; Ragkava, Efthymia. The Development of a Novel Sodium Alginate-Based Edible Active Hydrogel Coating and Its Application on Traditional Greek Spreadable Cheese. Gels 2023, 9(10), 807. https://doi.org/10.3390/gels9100807
- Giannakas, A.E.; Salmas, C.E.; Moschovas, D.; Karabagias, V.K.; Karabagias, I.K.; Baikousi, M.; Georgopoulos, S.; Leontiou, A.; Katerinopoulou, K.; Zafeiropoulos, N.E.; et al. Development, Characterization, and Evaluation as Food Active Packaging of Low-Density-Polyethylene-Based Films Incorporated with Rich in Thymol Halloysite Nanohybrid for Fresh "Scaloppini" Type Pork Meat Fillets Preservation. Polymers 2023, 15, 282. https://doi.org/10.3390/polym15020282
- Salmas, C.E.; Giannakas, A.E.; Moschovas, D.; Kollia, E.; Georgopoulos, S.; Gioti, C.; Leontiou, A.; Avgeropoulos, A.; Kopsacheili, A.; Avdylaj, L.; et al. Kiwi Fruits Preservation Using Novel Edible Active Coatings Based on Rich Thymol Halloysite Nanostructures and Chitosan/Polyvinyl Alcohol Gels. Gels 2022, 8, 823. https://doi.org/10.3390/gels8120823
- Giannakas, A.E.; Salmas, C.E.; Leontiou, A.; Moschovas, D.; Baikousi, M.; Kollia, E.; Tsigkou, V.; Karakassides, A.; Avgeropoulos, A.; Proestos, C. Performance of Thyme Oil@Na-Montmorillonite and Thyme Oil@Organo-Modified Montmorillonite Nanostructures on the Development of Melt-Extruded Poly-L-lactic Acid Antioxidant Active Packaging Films. Molecules 2022, 27, 1231. https://doi.org/10.3390/molecules27041231
- Giannakas, A.E.; Salmas, C.E.; Moschovas, D.; Baikousi, M.; Kollia, E.; Tsigkou, V.; Karakassides, A.; Leontiou, A.; Kehayias, G.; Avgeropoulos, A.; et al. Nanocomposite Film Development Based on Chitosan/Polyvinyl Alcohol Using ZnO@Montmorillonite and ZnO@Halloysite Hybrid Nanostructures for Active Food Packaging Applications. Nanomaterials 2022, 12, 1843. https://doi.org/10.3390/nano12111843
- Giannakas, A.E.; Salmas, C.E.; Leontiou, A.; Baikousi, M.; Moschovas, D.; Asimakopoulos,

G.; Zafeiropoulos, N.E.; Avgeropoulos, A. Synthesis of a Novel Chitosan/Basil Oil Blend and Development of Novel Low Density Poly Ethylene/Chitosan/Basil Oil Active Packaging Films Following a Melt-Extrusion Process for Enhancing Chicken Breast Fillets Shelf-Life. Molecules 2021, 26, 1585. https://doi.org/10.3390/molecules26061585

- Salmas, C.E.; Giannakas, A.E.; Baikousi, M.; Leontiou, A.; Siasou, Z.; Karakassides, M.A. Development of Poly(L-Lactic Acid)/Chitosan/Basil Oil Active Packaging Films via a Melt-Extrusion Process Using Novel Chitosan/Basil Oil Blends. Processes 2021, 9, 88. https://doi.org/10.3390/pr9010088
- Salmas, C.; Giannakas, A.; Katapodis, P.; Leontiou, A.; Moschovas, D.; Karydis-Messinis, A. Development of ZnO/Na-Montmorillonite Hybrid Nanostructures Used for PVOH/ZnO/Na-Montmorillonite Active Packaging Films Preparation via a Melt-Extrusion Process. Nanomaterials 2020, 10, 1079. https://doi.org/10.3390/nano10061079
- Giannakas, A.; Salmas, C.; Leontiou, A.; Tsimogiannis, D.; Oreopoulou, A.; Braouhli, J. Novel LDPE/Chitosan Rosemary and Melissa Extract Nanostructured Active Packaging Films. Nanomaterials 2019, 9, 1105. https://doi.org/10.3390/nano9081105
- Giannakas A.; Vlacha M. ; Salmas C.; Leontiou A.; Katapodis P.; Stamatis H.; Barkoula N.; Ladavos A. Preparation, characterization, mechanical, barrier and antimicrobial properties of chitosan/PVOH/clay nanocomposites. Carbohydrate Polymers 140 (2016) 408-415. https://doi.org/10.1016/j.carbpol.2015.12.072
- Giannakas A.; Grigoriadi K.; Leontiou A.; Barkoula N.; Ladavos A. Preparation, morphological characterization, mechanical and barrier properties investigation of chitosan-clay nanocomposites. Carbohydrate Polymers 108 (2014) 103-111. https://doi.org/10.1016/j.carbpol.2014.03.019
- Leontiou A.A.; Ladavos A.K.; Giannakas A.E.; Bakas T.V.; Pomonis P.J. A comparative study of substituted perovskite-type solids of oxidic $La_{1-x}Sr_xFeO_{3\pm\delta}$ and chlorinated $La_{1-x}Sr_xFeO_{3\pm\delta}Cl_\sigma$ form: Catalytic performance for CH_4 oxidation by O_2 or N_2O. Journal of Catalysis 251 (2007) 103-112. https://doi.org/10.1016/j.jcat.2007.07.012
- Giannakas A.E.; Leontiou A.A.; Ladavos A.K.; Pomonis P.J. Characterization and catalytic investigation of NO+CO reaction on perovskites of the general formula $La_xM_{1-x}FeO_3$ (M=Sr and/or Ce) prepared via a reverse micelles microemulsion route. Applied Catalysis A: General 309 (2006) 254-262. https://doi.org/10.1016/j.apcata.2006.05.016
- Pomonis P.J.; Petrakis D.E.; Ladavos A.K.; Kolonia K.M.; Pantazis C.C.; Giannakas A.E.; Leontiou A.A. The I-Point method for estimating the surface area of solid catalysts and the variation of C-term of the BET equation. Catalysis Communications 6 (2005) 93-96. https://doi.org/10.1016/j.catcom.2004.11.006
- Leontiou A.A.; Ladavos A.K.; Armatas G.S.; Trikalitis P.N.; Pomonis P.J. Kinetics investigation of NO+CO reaction on La-Sr-Mn-O perovskite-type mixed oxides. Applied Catalysis A: General 263 (2004) 227-239. https://doi.org/10.1016/j.apcata.2003.12.017

- Leontiou A.A.; Ladavos A.K.; Bakas T.V.; Vaimakis T.C.; Pomonis P.J. Reverse uptake of oxygen from $La_{1-x}Sr_x(Fe^{3+}/Fe^{4+})O_{3\pm\delta}$ perovskite-type mixed oxides (x = 0;00 0.15; 0.30; 0.40; 0.60; 0.70; 0.80; 0.90). Applied Catalysis A: General 241 (2003) 143-154. https://doi.org/10.1016/S0926-860X(02)00458-1
- Leontiou A.A.; Ladavos A.K.; Pomonis P.J. Catalytic NO reduction with CO on $La_{1-x}Sr_x(Fe^{3+}/Fe^{4+})O_{3\pm\delta}$ perovskite-type mixed oxides (x = 0.00; 0.15; 0.30; 0.40; 0.60; 0.70; 0.80; 0.90). Applied Catalysis A: General 241 (2003) 133-141. https://doi.org/10.1016/S0926-860X(02)00457-X

Conference Publications

- "A green method of manufacturing hybrid materials from hydrophilic and organophil montmorillonite and essential oils", A. Giannakas, A. Leontiou, I. Tsagkalias, D. Achilias, A. Ladavos, 5th Conference on Green Chemistry and Sustainable Development, Patras, 20-22 October 2017.
- "Composition and characterization of LDPE nanocomposined film - clay modified with essential oils", A. Giannakas A. Leontiou, K. Zacharioudakis, A. Ladavos, 5th Conference on Green Chemistry and Sustainable Development, Patras, 20-22 October 2017.
- "Effect of the different manufacturing method on mechanical properties, moisture barrier and antioxidant capacity of nanosythic chitosan/thyme oil/montmorillonite film", A. Giannakas, A. Leontiou, A. Ladavos, 5th Conference on Green Chemistry and Sustainable Development, Patras, 20-22 October 2017.
- "Authenticity check and certification of the geographical origin of agricultural products", (poster), C. Salmas, A. Leontiou, A. Patakas, A. Ladavos, 12th Chemistry Conference of Greece - Cyprus, Thessaloniki, 8-10 May 2015.
- "A comparative study of substituted perovskite-type mixed solids of oxidic $La_{1-x}Sr_xFeO_{3\pm\delta}$ and chlorinated $La_{1-x}Sr_xFeO_{3\pm\delta}Cl_\sigma$ forms for the catalytic oxidation of CH_4 by O_2", (poster), A.A. Leontiou, A.K. Ladavos, P.J. Pomonis, 7th European Congress on Catalysis, Sofia, Bulgaria, 28 August – 1 September 2005.
- "The I-Point method for the estimation of surface area of solids catalysts and the variation of C term of the BET equation using BET-Scatchard plots", P.J. Pomonis, D.E. Petrakis, A.K. Ladavos, K.M. Kolonia, G.S. Armatas, A.A. Leontiou, A.E. Giannakas, C.C. Pantazis, 7th European Congress on Catalysis, Sofia, Bulgaria, 28 August – 1 September 2005.
- "Surface properties, textural features and catalytic performance for NO+CO abatement of spinels MaI_2O_4 (M=Mg, Co and Zn) developed by reverse and bicontinuous microemulsion method", A.E. Giannakas, A.A. Leontiou, A.K. Ladavos, D.E. Petrakis, K.M. Kolonia, P.J. Pomonis, 7th European Congress on Catalysis, Sofia, Bulgaria, 28 August – 1 September 2005.
- "A novel method for the estimation of surface area of solids catalysts and the variation of C-term of the BET equation using BET-Scatchard plots", P.J. Pomonis, D.E. Petrakis, A.K. Ladavos, K.M. Kolonia, A.A. Leontiou, A.E. Giannakas, C.C. Pantazis, 13th International Congress on Catalysis, Paris, 11-16 July 2004.
- "Comparative study of substituted perovskitic oxides $La_{1-x}Sr_xFeO_{3\pm\delta}$ and $La_{1-x}Sr_xFeO_{3\pm\delta}Cl_\sigma$ for CH_4 oxidation reaction with N_2O or O_2", (poster), A. Leontiou, A. Ladavos, P. Pomonis, 8th Panhellenic Catalysis Symposium, Ayia Napa, Cyprus, 30 October – 1 November 2004.
- "Oxygen absorption study in mixed perovskitic structure oxides$La_{1-x}Sr_xFeO_{3\pm\delta}$ using thermal analysis techniques", A. Leontiou, A. Ladavos, P. Pomonis, 2nd Panhellenic

Conference on Thermal Analysis, Ioannina, 25-26 June 2004.

- "Catalytic activity of La-Sr-Mn-O mixed perovskitic oxides in NO+CO reaction", (poster), A. Leontiou, A. Ladavos, G. Armatas, P. Pomonis, 5th Conference of the Department of Chemistry, University of Ioannina, 22-24 October 2002.
- "Catalytic activity of La-Sr-Mn-O mixed perovskitic oxides in NO+CO reaction", (poster), A. Leontiou, A. Ladavos, G. Armatas, P. Pomonis, 7th Panhellenic Symposium on Catalysis, Edessa, 4-5 October 2002.

Book Chapters

- Giannakas, Aris E., and Areti A. Leontiou. "Montmorillonite composite materials and food packaging." Composites materials for food packaging (2018): 1-71.

Scholarships

- Achievement Scholarship (IKY) - State Scholarships Foundation - Department of Chemistry, University of Ioannina for academic years 1996-97 and 1997-98.
- Achievement Award (IKY) - State Scholarships Foundation - Department of Chemistry, University of Ioannina for academic year 1997-98 .
- Excellence & Achievement Awards for all school years 1990-1996

Additional Skills

- English ability:
  Certificate of Proficiency, University of Cambridge, 2000
  Certificate of Proficiency, University of Michigan, 2000

- Computer skills:
  ECDL Training Diploma, 2004