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Member
Industrial Engineering School
Lima University
Circular Economy Research Group
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Research interests

- Manufacturing and characterization of nanomaterials.
- Applications of materials for energy capture and storage
- Manufacture of ceramics for industrial applications
- Application of magnetic techniques for mineral concentration.
- Characterization of materials by XRD, FTIR, TGA-DSC, Magnetometry, thermometry.

Qualifications

PhD, Doctor en Física, Universidad Nacional de Ingeniería, Peru
Master, Maestría en Física, Universidad Nacional de Ingeniería, Peru
Bachelor, Licenciado, Universidad Nacional de Ingeniería, Peru

Employment

Industrial Engineering School
Lima University
25 Oct 2019 → present

Lima University
Santiago de Surco, Peru
25 Oct 2019 → present

Member
Circular Economy Research Group
Lima University
1 Jun 2021 → present

Member
Applied Nanomaterials Research Group
Lima University
25 Oct 2019 → present

Member
Technological solutions for Environment Research Group
Lima University
28 Nov 2024 → present

Research outputs

Sustainable magnetic hydrogels derived from cotton fabric waste as candidates for dual-triggered drug release applications

Chumpitaz, D., Mariños, Y., Peña, E., Sencia, J. J. H., Zapata, A., Ponce, S., Félix, L. L., Quispe, L. T., López, R. & Gutarra, A., Dec 2025, In: Materials Today Communications. 49, 114194.

From Bolaina Blanca Wood Fibers to Antimicrobial Films: Characterization and Application in the Food Industry Using Copper Nanoparticles

Gutarra Espinoza, A. A., 29 Nov 2024, Journal of Natural Fibers, 21, 1, 2431314 .

The Effect of Temperature on the Rate of Oxygen Evolution Reaction during Ferrate(VI) Synthesis by Anodic Dissolution of Iron in highly alkaline media

Quino-Favero, J., Gutarra Espinoza, A. A., Saettone Olschewski, E. A., Yacono Llanos, J. C. & Paredes H, F., 29 Jul 2024 , In: Heliyon. 10, e35414.

ASSESSMENT OF CELLULOSE NANOFIBERS FROM BOLAINA BLANCA WOOD OBTAINED AT THREE SHAFT HEIGHTS

Arango-Perez, S. A., Gonzales-Mora, H. E., Ponce-Alvarez, S. P., Gutarra-Espinoza, A. A. & Cárdenas-Oscanoa, A. J., 2024, In: Maderas: Ciencia y Tecnología. 26, 18.

From Bolaina Blanca Wood Fibers to Antimicrobial Films: Characterization and Application in the Food Industry Using Copper Nanoparticles

Ponce Álvarez, S. P., Gutarra Espinoza, A. A., Chumpitaz, D., Cardenas, A. J., Gonzales-Mora, H. E., Quino-Favero, J., Gomez-Maldonado, D. & Peresin, M. S., 2024, In: Journal of Natural Fibers.

Identification of rare-earth minerals associated to K-feldspar: Capacsaya project in Peru

Gutarra Espinoza, A. A., 11 Dec 2021, In: SN APPLIED SCIENCE. p. 4-12 9 p.

Cellulose Microfibrils Obtained from Agro-Industrial Tara Waste for Dye Adsorption in Water

Ponce, S., Chavarria, M., Norabuena, F., Chumpitaz, D. & Gutarra, A., 1 Oct 2020, In: Water, Air, and Soil Pollution. 231, 10, 518.

Synthesis, characterization and bio-functionalization of magnetic nanoparticles to improve the diagnosis of tuberculosis

León-Janampa, N., Zimic, M., Shinkaruk, S., Quispe-Marcotoma, J., Gutarra, A., Le Bourdon, G., Gayot, M., Changanaqui, K., Gilman, R. H., Fouquet, E., Sheen, P. & Szlosek, M., 10 Feb 2020, In: Nanotechnology. 31, 17, p. 175101 175101.

Detection of magnetic moment in thin films with a home-made vibrating sample magnetometer

Jordán, D., González-Chávez, D., Laura, D., León Hilario, L. M., Montebanco, E., Gutarra, A. & Avilés-Félix, L., 15 Jun 2018, In: Journal of Magnetism and Magnetic Materials. 456, p. 56-61 6 p.

Separación Electrostática de Minerales compuestos de Tierras Raras: Proyecto Capacsaya, Cusco

Ochoa, J., Montebanco, E., Carrera, E., Cruz, M., Avilés-Felix, L. & Gutarra, A., 1 Jun 2018, In: Revista Científica TECNIA. 28, 1

Determinación del tamaño de partículas pequeñas por scattering de luz

Velazco, A. & Gutarra, A., 4 Apr 2018, In: Revista Científica TECNIA. 27, 2, p. 27

Fabrication of ultra-sharp tips from carbon fiber for scanning tunneling microscopy investigations of epitaxial graphene on 6H-SiC(0 0 0 1) surface

Morán Meza, J. A., Lubin, C., Thoyer, F., Villegas Rosales, K. A., Gutarra Espinoza, A. A., Martin, F. & Cousty, J., 1 May 2015, In: Carbon. 86, p. 363-370 8 p., 9674.

Study of the structural modifications in activated clays by Mössbauer spectroscopy and X-ray diffractometry

Huaypar, Y., Bravo, J., Gutarra, A. & Gabriel, E., 1 Feb 2007, In: Hyperfine Interactions. 175, 1-3, p. 23-28 6 p.

Photodegradation of an azo dye of the textile industry

López Cisneros, R., Gutarra Espinoza, A. & Litter, M. I., 1 Jan 2002, In: Chemosphere. 48, 4, p. 393-399 7 p., 4166.

Impedance spectroscopy on lithiated Ti oxide and Ti oxyfluoride thin films

Strømme, M., Gutarra, A., Niklasson, G. A. & Granqvist, C. G., 1 Apr 1996, In: Journal of Applied Physics. 79, 7, p. 3749-3757 9 p.

DC magnetron sputtered Mo-Ti oxide films for color neutral electrochromic devices

Kullman, L., Azens, A., Gutarra, A. & Granqvist, C. G., 1995, In: Ionics. p. 338-341

Electrochromism in oxyfluoride thin films

Azens, A., Gutarra, A., Stjerna, B. A., Granqvist, C. G., Gabrusenoks, J. & Lusi, A. R., 1 Dec 1994, *Proceedings of SPIE - The International Society for Optical Engineering*. Society of Photo-Optical Instrumentation Engineers, p. 435-442 8 p. (Proceedings of SPIE - The International Society for Optical Engineering; vol. 2255).

Electrochromism of sputtered fluorinated titanium oxide thin films

Gutarra, A., Azens, A., Stjerna, B. & Granqvist, C. G., 1 Dec 1994, In: Applied Physics Letters. 64, 13, p. 1604-1606 3 p.

Projects

Development of biodegradable and antibacterial packaging paper using a bilayer film based on nanocellulose from Bolaina (Guazuma crinita) forest residues with the incorporation of copper nanoparticles for the food industry

Ponce Álvarez, S. P. (PI), Gutarra Espinoza, A. A. (Col), Peresin, M. S. (ECol), Cardenas, A. J. (ECol) & Gonzales, H. E. (ECol)

FONDECYT

11/01/21 → 14/10/22

nanobeads: Estudio de la capacidad adsorbente de esferas magnéticas basadas en carbón activado y nanocelulosa a partir de desechos de la producción de goma de tara para la remoción de arsénico en agua

Gutarra Espinoza, A. A. (Col) & Ponce Álvarez, S. P. (PI)

1/04/24 → 10/04/25

Improvement of the quality of the water used in trout farming through the use of pellets manufactured from the waste from the fan shells and shrimp for the removal of heavy metals

Ponce Álvarez, S. P. (PI), Quino Favero, J. M. (Col), Gutarra Espinoza, A. A. (Col) & Rodriguez Rodriguez, J. M. (Col)

Programa Nacional de Innovación en Pesca y Acuicultura - PNIPA

1/12/18 → 31/03/21

Manufacture of nanocellulose-rubber-clay composite pellets for the removal of dyes in textile effluents

Ponce, S. (PI) & Gutarra Espinoza, A. A. (Col)

1/04/19 → 31/03/20

EOSHCA: Método de ensamblaje optimizado para supercapacitores con electrolito de hidrogel obtenido de fibras de algodón

Gutarra Espinoza, A. A. (PI), Ponce Álvarez, S. P. (Col), LEON FELIX, L. (Col) & Quino Favero, J. M. (Col)

1/04/26 → 31/03/27

Obtaining modified chitosan nanofiber biomembranes for the removal of divalent lead ions in water contaminated by mining tailings.

Morales Gomero, J. C. (PI), Ponce, S. (Col), Gutarra Espinoza, A. A. (Col), Sanabria Villanueva, J. C. (Col) & Alarcon Cavero, H. A. (Col)

1/04/22 → 31/03/23

Obtención de polímeros de nanocelulosa a partir de los cítricos peruanos: limón, mandarina y naranja

Ponce Álvarez, S. P. (PI), Gutarra Espinoza, A. A. (Col), Arroyo Benites, E. V. (Col), Pisua Gonzales, L. A. (ECol), Iparraguirre Chipana, K. J. (Assl), Castro Mandujano, O. N. (ECol) & Chumpitaz, D. (Assl)

1/04/23 → 31/03/24

PDH: Preparación de hidrogeles magnéticos de nanocelulosa para liberación controlada de fármacos

Gutarra Espinoza, A. A. (PI), Ponce Álvarez, S. P. (Col) & LÓPEZ CISNEROS DE CASTILLO, R. C. (ECol)
1/04/24 → 10/04/25

Preparación de nanopartículas magnéticas por microfluídica para la captura de microplásticos

Quino Favero, J. M. (Col), Villagarcía Garate, H. E. (PI) & Gutarra Espinoza, A. A. (Col)
1/04/25 → 31/03/26

Remoción de metales pesados en aguas utilizadas para el cultivo de truchas mediante el uso de membranas de nanofibras de quitosano bioadsorbentes funcionalizadas obtenidas a partir de desechos de langostinos

Gutarra Espinoza, A. A. (Col), Ponce, S. (Col) & Sanabria Villanueva, J. C. (PI)
1/12/21 → 30/11/22