Gaël Parpan

PhD Candidate | National Conservatory of Arts and Crafts, Paris, France

Profile

Objective

I am looking for a postdoctoral contract starting in January 2026. I wish to join a research group that focuses on the following topics: Mineral Economics, Industrial Ecology, Scenario and Pathway Modelling, Resource Efficiency Strategies, and Ecological Engineering. As a PhD Candidate at the National Conservatory of Arts and Crafts, my PhD thesis focuses on the prospective modelling of copper availability and assessing the feasibility of decarbonization pathways. This thesis is entitled: "*Climate Change Mitigation Under Constraints of Strategic Minerals Availability: The Central Case of Copper in Decarbonization Pathways*" under the supervision of Prof. Stéphane Delalande and Prof. Yves Jégourel.

Research Fields

Industrial Ecology, Mineral Economics, Ecological Engineering

Education

- **National Conservatory of Arts and Crafts** — *since 2022*
  PhD degree — Paris, France

- **University of Technology of Troyes** — *2018 - 2022*
  Sustainable Engineering Master Degree — Troyes, France
  Material Engineering Master Degree

- **Czech Technical University** — *2020 - 2021*
  Erasmus semester — Prague, Czech Republic

- **Lyon 1 University Institute of Technology** — *2015 - 2018*
  Mechanical and Industrial Bachelor Degree — Lyon, France

Publications

Research Articles

[1] G. Parpan, B. Andrieu, O. Vidal, L. Delannoy, H. L. Boulzec, M. Gervais, Y. Jegourel, and S. Delalande, *Examining copper supply feasibility in decarbonization pathways: A mine-level dynamic approach*, en, Submitted to Ressources, Conservation and Recycling Journal, Apr. 2025. DOI: 10.31223/X5442S

[2] B. Andrieu, K. Cervantes-Barrón, R. Pant, S. Barzin, M. Heydari, G. Parpan, and J. Cullen, *The Impact of Mine Ownership on Trade of Metal Ores*, Submitted to Ressources, Conservation and Recycling Journal, Apr. 2025. DOI: 10.21203/rs.3.rs-6335460/v1

Magazine Article

[3] G. Parpan and J. Heckler, "De l'usage des ressources naturelles à l'ère de la transition," *Opérationnels SLDS - Soutien Logistique Défense Sécurité*, Nov. 2023. [Online]. Available: https://operationnels.com/

Presentation

[4] G. Parpan, *Dynamic and prospective assessment of criticality: Methodological challenges of a transdisciplinary approach*, Recherches-Ressources Group Conference, Aubervilliers, France, Nov. 2023

[5] G. Parpan, *Modelling technology deployment under minerals availability constraints*, Poster Presentation, Les Houches School of Physics, Les Houches, France, Jun. 2024

Teaching

- **Sustainable Development - SEA13a** *2024 & 2025*
  National Conservatory of Arts and Crafts Engineering School - Aeronautical Engineering
  - Lectures, Seminars, Project: 23.3 & 22.2 hours
  - Topics: Climate Change, Planetary Boundaries, LCA, Carbon Footprint, Sustainable Design

- **Prospective Towards Sustainability - IIM US173L** *2023*
  National Conservatory of Arts and Crafts - Sustainable Development and Quality Management Master
  - Lectures, Seminars: 18 hours
  - Topics: Climate Change, Planetary Boundaries, LCA, Circular Economy, Carbon Footprint, Sustainable Design

- **Polymer Science Practical Work - USMA1Z** *2023*
  National Conservatory of Arts and Crafts Engineering School - Material Engineering
  - Practical work: 14 hours
  - Topics: Polymer Extrusion, DSC Analysis

Scientific Engagement

- **Phd and Postdoc Day of Recherches-Ressources Group** *2025*
  Member of the organizing comitee

- **French Society for Metallurgy and Materials Annual Conference** *2024*
  Member of the organizing comitee of "The Future Generations Court"

- **The National Academy of Technologies of France wih young people** *2023 - 2024*
  Member of the organizing comitee

- **PhD students' association of Arts et Métiers** *2023 - 2024*
  Member of the association's board

Professional Experience

- **NEPSEN Transition** *2022*
  6 months intership as a Carbon Footprint Consultant Bordeaux, France

- **SAAMP - Precious Metal Refining and Appreting Company** *2020*
  6 months internship as an R&D engineering assistant Lyon, France

- **Gravotech** *2018*
  4 months internship as an R&D technician Lyon, France

Language and Tools

Language

- **French:** native language
- **English:** C1 (advanced) - BULATS reading, listening 85/100

Tools

- **Life Cycle Assessment:** OpenLCA
- **Material Flow Analysis:** STAN, Sankey Diagrams, VENSIM
- **Carbon Footprint:** Bilan Carbone ®, GHG Protocol
- **IT Tools:** Microsoft Office, LateX, Python language, LLM models, Zotero