



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Martina Petranikova

Type (Academic or Industrial): Academic

Country: Sweden

Leadership position in the COST: MC Member of CA18224

Working Group in which you are involved: WG1

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Laboratory/Company: Chalmers University of Technology

Laboratory/Company info: The group has more than 11 years' experience in the metal recycling and much longer competence in the hydrometallurgical processes. It belongs among the leaders in application of solvent extraction method for metals purification. Our expertise is significant in the fundamental research and scaling up.

Link to the home page of the Laboratory/Company:

<https://www.chalmers.se/en/departments/chem/research/energymaterials/imr/Pages/Industrial-Materials-Recycling.aspx>

Fields of expertise:

- Metal recycling
- hydrometallurgy
- pyrometallurgy
- solvent extraction and metal purification
- thermodynamic modelling
- scaling up of the chemical processes
- etc.

5 Main publications or patents:

- Novel process for decontamination and additional valorization of steel making dust processing using two-step correlative leaching/ Petranikova M., Ssenteeza V., Lousada C.M., Ebin B., Tunsu C.: Journal of Hazardous Materials, in press
- <https://doi.org/10.1016/j.jhazmat.2019.121442>
- Chemical transformations in Li-ion battery electrode materials by carbothermic reduction/ Lombardo, G., Ebin, B., Foreman, R. StJ. M., Steenari, BM., Petranikova M.: ACS Sustainable Chemistry and Engineering, 2019, in press
- <https://doi.org/10.1021/acssuschemeng.8b06540>
- Perspectives for the recovery of critical elements from future energy-efficient refrigeration materials/ Tunsu C., Petranikova M. Journal of Cleaner Production, Volume 197, Pages 232-241, 2018
- <https://doi.org/10.1016/j.jclepro.2018.06.185>
- Recovery of critical materials from mine tailings: a comparative study of the solvent extraction of rare earths using acidic, solvating and mixed extractant systems/ Tunsu,



C., Menard, M., Eriksen, DO., Ekberg, Ch., Petranikova, M.: Journal of Cleaner Production, Volume 218, Pages 425-437, 2018

- <https://doi.org/10.1016/j.jclepro.2019.01.312>
- Selective recovery of cobalt from the secondary streams after NiMH batteries processing using Cyanex 301/ Petranikova, M., Ebin, B., Tunsu, C.: Waste Management, Volume 83, Pages 194–201, 2019
- <https://doi.org/10.1016/j.wasman.2018.11.022>

Collaborations:

Volvo Cars AB, Northvolt AB, Nouryon AB, Stena Metall AB, MEAB AB, Accurec, Akkuser, etc.

Facilities:

- Laboratories for hydro and pyrometallurgical processes, pilot plant for solvent extraction processes, different analytical equipment