

CZEGLÉDI ALEXANDRA**When the red mud cleans capitalist production by accident.
Techno-scientific knowledge production in Hungary
to valorize industrial waste**

In 2010, the bauxite residue of alumina production, better known as toxic red mud, unprecedentedly flooded three villages in North-Western Hungary, near Ajka. After the eco-social disaster, ecologists, bioengineers, chemical engineers and bauxite technologists have tested the components and effect of the allegedly toxic matter. To excavate the way in which the red mud research evolved and became politicized, I conducted multi-sited ethnographic interviews with scientists in Hungary affiliated with University of Miskolc, Budapest University of Technology and Economics, Hungarian Academy of Science and Greenpeace. I did archival research in Almásfüzitő and Ajka to compare the current technologies and knowledge production to what was the hegemonic narrative on the red mud during state socialism.

The interviews show that the red mud accident paradoxically brought opportunity to Hungarian researchers for global recognition and career opportunities, and thus provided a terrain for further techno-scientific knowledge production on remediation and valorization of the red mud. Hungarian scientists have been negotiating category of toxicity by which they often cancel out the potentiality of harm and argue for reuse of the red mud as fertilizer, colorant, etc. To reuse the red mud and to deal with its environmental consequences, several patent was discussed during state socialism. Since the accident, however, materiality of the red mud received more scientific attention as the repository of invisible, but valuable rare earth elements (REE).

Therefore, what came to be at stake in the red mud research agenda setting at European Union (EU) level is the classification of the matter as by-products which allows alumina companies to treat it as a marketable product rather than a potentially harmful waste. In light of this, I argue that technoscientific knowledge production on valorization of the red mud's REE, such as scandium, demonstrates that recognizing agency of biochemical elements by scientists is twofold: first, it fosters an argument on self-cleaning capacity of nature which ignores latency and persistence of toxic chemical infrastructures (Murphy 2013), and consequently, it contributes to further economic value extraction within the global network of alumina industry under the disguise of zero-waste economy imagined by the EU.