

MUD BATTERY

Imagining feminist hardware as a more ethical technology made us look for renewable energy sources that could empower feminist hardware. In 2021 we invited Julian Chollet, a member of *Mikrobiomik*, to run a two-day online workshop on microbial fuel cells with our team (<https://mikrobiomik.org/>). He explained that the term 'microbiome' is used to describe the sum of all microorganisms that populate a specific ecosystem. The mud battery is therefore not a battery but a microbial fuel cell, which means it will never go empty like batteries do. Instead, it 'grows' electrons, as long as you regularly feed the microorganisms and keep the soil temperature stable. The way that microbacteria can generate an electric current was recently discovered by biologists and later implemented in a variety of applications, for example powering sensors on the ocean floor. The mud battery workshop conducted in 2022 was supposed to open up a discussion about how we will generate energy in the future, and whether it is okay to 'use' microorganisms to generate 'our' electricity?

After experimenting with many different forms, shapes and compositions for mud batteries and their potential applications in art projects, we held a mud battery workshop at Mz* Baltazar's Lab. It was early spring 2022 when we carried a table and some chairs to the park in front of the lab. The intention was to open up the hacklab to new workshop participants and (inspired by Anja Groten) make it intergenerational. Several children who played in that particular neighbourhood joined in. It was a dynamic situation that strengthened our ties with people living nearby – it was a densely populated public housing area, with people often living in precarious conditions. Our intention was to invite mums to hack with us, so we tried to provide workshop content that could be exciting for both adults and children. But we did not succeed in keeping participating mums interested in hacking, because they were mostly enjoying a short break from childcare. While their children were busy building mud batteries, they were enjoying some well-deserved 'me time'. For future workshops, we might need to provide a separate space for it.

What we learned from giving this workshop was that outdoor workshops are more inclusive. They attract people who would otherwise be hesitant to enter the hacklab/studio space and sign up for a workshop. We also found that the content of the workshop needs to be meaningful to different age groups. This can be accomplished by distributing tasks that are more or less challenging among children and caretakers. The caretakers who stayed and engaged in the workshop expressed their appreciation for being seen and heard with their challenges. As long as no shared language is required, workshops in urban public spaces of diverse neighbourhoods can provide platforms of exchange, and hands-on practices allow people with different mother tongues and from different age groups to join in and collaborate. Some parents later brought food, snacks and even fresh hot soup down to our table, turning the end of the workshop into a spontaneous picnic. Even weeks after the workshop, participants still came up to me on the street to say hello and share a smile.

We later gave this workshop in Berlin at the re:publica 22 Conference. Here, the challenges were very different: it was difficult to find real mud on site. It was a key takeaway of the workshop in Berlin that stealing soil from plant pots is counter-productive, because plant fertilisers change the milieu for microbacteria within the soil. What was positive about this workshop was that Saad Chinoy dropped by, becoming an important collaborator and contributor to our citizen science project with an interview that was later used to create a Saad Chinoy avatar (Part 3).



Workshop with Julian Chollet via Zoom at MZ* Baltazar's Lab, Vienna, 2022
Photo © Patrícia J. Reis



Intergenerational workshop in urban public space, organised by Olivia Jaques and Stefanie Wuschitz, Vienna, 2022
Photo © Olivia Jaques



Feminist hardware workshop at re:publica 22 by Stefanie Wuschitz (with live interview in Deutschlandradio), Berlin, 2022
Photo © re:publica 22