

IAQ QUALITY SUSTAINABILITY AWARD 2021 - ONE-PAGE SUMMARY

| Project and contact details | | |
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| The name of the quality sustainability project (max. 100 characters) Landfill-destined waste transformed into the UBQ™ material. | | |
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| Organisation(s), country, where the project-members are working, including Web-page links UBQ Materials, Israel, www.ubqmaterials.com | | |

| Project description |
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| <p>Humans produce more than 2 billion tons of municipal solid waste (MSW) annually, and this number is expected to double in the next 30 years. Landfills have long been the end destination for MSW, posing a host of issues, from groundwater leakage to the emission of Methane and other toxins. The organic materials and biodegradable plastics decomposing in landfills are massive generators of Methane – a GHG 86 times more potent than CO₂. This, combined with the fact that only 9% of plastic waste ever produced has been recycled, presents us with a clear and urgent challenge. Between 2012 and 2017 UBQ Materials' product and manufacturing process were developed. With the involvement and the support of a team of scientists and process engineers, we realized that the organic fraction of the household waste (food residues, cardboard, paper) could be reduced to its basic natural components and then blended back into a matrix with the mixed plastics to create a new material, made entirely of unsorted household waste, that has thermoplastic characteristics suited for industrial manufacturing. UBQ's advanced conversion technology transforms the entirety of unsorted household waste (from banana peels and dirty diapers to unrecyclable plastics and dirty cardboard), into a sustainable, recyclable, bio-based material that can substitute conventional plastic, concrete, and wood in the manufacturing of everyday products. UBQ™ material has already tested reliable for use in the manufacturing of pipes, shopping carts, bricks, garment hangers, pallets, panels, and even automotive parts. The patented conversion from landfill-waste into UBQ™ material leverages the organic majority waste composition by breaking it all down into its basic natural components, lignin, cellulose, sugar, and fibers. In an energy-efficient process that is independent of water and produces no harmful emissions, the heterogeneous waste components are transformed into a homogeneous, composite thermoplastic. With slightly more than a decade left to reduce global warming levels, UBQ recognizes zero-waste to be one of the fastest, cheapest, and most effective ways to reduce emissions and accelerate the transition to a circular economy. By untapping the potential of household waste and utilizing such "unwanted" material as feedstock, UBQ™ diverts significant amounts of waste and emissions, enabling manufacturers to offset and even reverse their carbon footprint while providing a novel renewable resource for the plastics, wood, minerals, and concrete industries. With UBQ, manufacturers no longer need to choose between sustainability and profitability. Our material introductory sales price is 1:1 competitive with traditional resins on the market with no additional adaptation costs. In comparison to traditional plastics, our profit margin is increased due to the lack of feedstock costs (oil), refining processes or monomerization. Beyond price parity, UBQ's competitive advantage is its ability to provide long-term fixed prices regardless of market volatility, all while bringing a powerful environmental value proposition. A certified B Corporation, UBQ was awarded 'Best for the World' in 2019, and is 1 of 1000 solutions labeled by the Solar Impulse Foundation to be economically and environmentally sustainable.</p> |

| Project leverage potential | Picture/Image describing the project |
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| <p>Both the advanced conversion technology and the UBQ™ material have been granted patents worldwide. UBQ™ is a drop-in material that is compatible with today's standard manufacturing processes. UBQ™ can be used as a replacement for synthetic plastics without additional adaptation costs. The material is used in injection, compression molding, extrusion, and 3D printing, and can be compounded with PP, PE, PLA, and PVC. UBQ's partnerships include production of recycling bins for Central Virginia, premium auto parts with Motherson and Mercedes Benz, serving trays with McDonald's, climate-forward garment hangers with Mainetti, outdoor furniture, garden products and sheds with Keter, and most recently partnering with Plastics App, making 3D printing even more sustainable and functional.</p> |  |