

Case ID:M20-261P

Published: 9/29/2021

Inventors

Xuesong Zhou

Xenia Zhao

Contact

Shen Yan
shen.yan@skysonginnovations.
com

System for Tracking Geographical Circulation of Plastics

Background Few technologies exist that track the flow of plastic from source to sink, especially geographically. Current models cannot accurately predict plastic congestion in a region or project when plastic consumption will reach zero. This has created problems for modeling plastic pollution, which prevents further research and problem-solving efforts. As such, parties—both government entities and non-governmental organizations (NGOs)—lack data to drive decisions. Hence, there is a need for a trusted data-collection system to enable long-term planning and solutions. **Invention Description** Researchers at Arizona State University have developed a distributed database for storing data on plastics distribution based on geographic self-reporting by individuals and organizations. The database capitalizes on InterPlanetary File System (IPFS) blockchain technology for encryption, resulting in a reliable and resilient framework. Embodiments analyze inflow and outflow rates of plastic to better quantify saturation levels. An incentive feature called EcoMetric can be used to rank the plastic friendliness of different companies by industry, facilitating goal development for plastic consumption. **Potential Applications** • Geographical waste analysis • Systems-level plastics movement **Benefits and Advantages** • Provides researchers and policymakers with quantitative data for plastic flows • Data reporting preserves privacy of participants • Gives insights into plastic usage by industry • Framework can be used to reward participants for improved performance and incentivize adoption

[Faculty Profile of Professor Xuesong Zhou](#)

