Sustainable Electronic Waste Management via Thermal Plasma Processing: Opportunities and Challenges

Dr. hab. Mgr. Maksym Buryi, Ph.D., Mgr. Alan Mašláni, Ph.D., Mgr. Michal Hlína, Ph.D., Dr. Shelja Sharma, Dr. Brenda Natalia Lopez Nino, Ing. Jafar Fathi, Ing. Jakub Pilař, Ústav fyziky plazmatu AV ČR

Thermal plasma processing shows strong potential for efficient treatment of mixed electronic waste. Its high-temperature environment may enable the rapid decomposition of organics and facilitate metal recovery in molten form. By optimizing parameters such as plasma power, feed rate, and gas flow, this approach could achieve high metal recovery and pollutant destruction, offering a promising pathway for sustainable e-waste valorization.