

August 16, 2021

Art Ragauskas,
Professor/Governor's Chair in Biorefining
The University of Tennessee-Knoxville/Oak Ridge National Laboratory
Department of Chemical and Biomolecular Engineering/Department of Forestry, Wildlife, and
Fisheries
323-B Dougherty Engineering Bldg.,
1512 Middle Drive, Knoxville, TN 37996-2200
Via email (aragausk@utk.edu)

RE: Letter of Support, DOE EERE Single-Use Plastics Recycling

Dear Professor Ragauskas:

The Flexible Packaging Association (FPA) would like to express its support and endorsement for the proposed DOE/EERE research program titled "Integrated Upcycling of Multilayer Films to Chemicals," Topic Area 1: Novel Approaches to Recycling and Upcycle Films. FPA represents flexible packaging manufacturers and suppliers to the industry in the U.S. Flexible packaging represents \$34.8 billion in annual sales; is the second largest, and fastest growing segment of the packaging industry; and employs approximately 80,000 workers in the United States. Flexible packaging is produced from paper, plastic, film, aluminum foil, or any combination of these materials, and includes bags, pouches, labels, liners, wraps, rollstock, and other flexible products.

These are products that you and I use every day – including hermetically sealed food and beverage products such as cereal, bread, frozen meals, infant formula, and juice; as well as sterile health and beauty items and pharmaceuticals, such as aspirin, shampoo, feminine hygiene products, and disinfecting wipes. Even packaging for pet food uses flexible packaging to deliver fresh and healthy meals to a variety of animals. Flexible packaging is also used for medical device packaging to ensure that the products packaged, diagnostic tests, IV solutions and sets, syringes, catheters, intubation tubes, isolation gowns, and other personal protective equipment maintain their sterility and efficacy at the time of use. Trash and medical waste receptacles use can liners to manage business, institutional, medical, and household waste. Carry-out and take-out food containers and e-commerce delivery, which are increasingly important during this national emergency, are also heavily supported by the flexible packaging industry.

Thus, FPA and its members are particularly interested in solving the plastic pollution issue and increasing the recycling of solid waste from packaging. The development of new upcycling technologies for Multilayer Films (MLF) is one of the highest priorities for the US industries wishing to develop sustainable chemicals from waste plastics. Although many researchers have explored upcycling opportunities for select waste plastic components, the need for low-cost

integrated manufacturing protocols remains, largely unanswered. The need for new fundamental breakthroughs are urgently needed, as the potential for upcycling MLF is projected to be in the millions of tons/year. This proposal addresses this challenge based on conversion pretreatments and fundamental science and engineering surrounding this process. With this challenge addressed the utilization on MLF could be readily envisaged to develop new encapsulation substrates and applications.

The research objectives, experimental design, techno-economic/life-cycle analysis, and program management are excellent and ensure the success of this program. The proposal utilizes the expertise of Drs. Ragauskas, Yoo, Kumar, Mintz and Ingram, all experts in the respective fields, and exemplifies how translational academia research should be accomplished. FPA firmly believes that their plan to work closely with a team of industrial and academic partners will ensure that the work will remain relevant to the practical upcycling MLF technologies. FPA urges the proposal reviewers to support this innovative, high impact research program that will have broad societal impact.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Alison Keane', with a stylized, flowing script.

Alison Keane, Esq., CAE, IOM
President & CEO