

Topics for Potential Collaboration with Unilever Shanghai

- 1. PCR:** Fundamental research/capability about (potential) application issues of post-consumer resin (PCR): Rapid chemical/physical characterization methods of PCR e.g. color, odor, mechanical strength, chemical composition changes, fate/accumulation of additives (e.g. pigments, stabilizers, anti-oxidants, plasticizers) and their interactions with ingredients in circular use etc
- 2. Micro-plastics:** Alternatives biodegradable polymers for defined applications e.g. structurants, deposition aid, sweat control, SPF water resistance, anti-stains, optical benefits, biodegradable material for encapsulation technology etc.
- 3. Green chemistry and/or biotechnology** for future fit surfactants with new headgroup chemistry. **Green/Clean process for natural processing/extraction** to maximize naturals value.
- 4. Rapid in situ non-invasive measurements and analytical capabilities for** trace materials tracking (e.g. external stressors, pollutants, biomarkers, metabolites) and functional actives (e.g. deposited benefit agents from BPC products) or microbial metabolites in-situ detection/tracking (e.g. on Skin/Scalp)
- 5. Leads from Naturals/TCM and rapid screening in in-silico/Data science/advanced modeling capabilities:** for Selective antimicrobials and Preservatives; for Prebiotics/ Host immunity and other relevant consumer benefits.
- 6. Capabilities to carry out microbiomic study Cohorts in China (SEA) cohorts** to understand local microbiome signatures and associations with health & disease (e.g. scalp health)