

AMERICAN FILTRATION & SEPARATIONS SOCIETY



MAY 1-3 • GALT HOUSE HOTEL • LOUISVILLE, KENTUCKY

### ***Next Generation Three-Dimensional Filter Media Composites***

**Mr. Mike Clark**

**Hollingsworth & Vose**

The development of next-generation filter media with improved performance is essential to meet the increasing demands in many different filtration markets. Filter media manufacturers have gone from single-layer, single-technology materials to a variety of composite materials that leverage the strength of each technology utilized. The composite materials have helped meet the increasing demands of filtration to help create a sustainable, healthier, and cleaner world for air and liquid filtration. However, as demands become even more technically challenging to reduce energy usage while also providing clean air and liquids not only are composite materials needed but also require unique ways of orienting these composite materials. The most recent developments in filter media are three-dimensional structures that are decreasing pressure drop by nearly 50% versus two-dimensional composites. These breakthrough technologies used in many filter configurations allow for the same filter dimensions but far greater surface areas and thereby large energy savings. This discussion provides fundamental principles using computational modeling and real-life data to show the benefits of composites and 3-dimensional filtration media in energy savings, filter life, and reduced CO<sub>2</sub> emissions required for cleaner air and liquids.