

Bicomponent Fibers for Thermoplastic Composites: Concept and Manufacture

Christoph Schneeberger, Joanna Chi Hing Wong and Paolo Ermanni

ETH Zurich, Switzerland

We propose an alternative concept for hybrid intermediate materials used in high volume production of thermoplastic composites by coating individual glass filaments with a polymer sheath. Such bicomponent fibers provide a full wet-out while retaining the handling possibilities of fiber rovings. Dip-coating in-line with the glass fiber spinning process is suggested as a potential fabrication route and the feasibility of this method is assessed through theoretical considerations. Finally, a proof of concept for dip coating single filaments in dilute polymer solutions is given.