Features

26  The Changing Face of Denim
   By Iza Wojciechowska
   Even though it’s a reliable staple, it would be a mistake to consider denim static. It’s an exciting era of reinvention for denim, with sustainability, technology, and the desire for comfort driving major innovation.

32  Using Bacteria to Decolorize Textile Wastewater
   By Nicola Davies
   Textile industry wastewater contains complex chemicals that can pollute the environment. To reduce environmental pollution from textile dyes and make sure rivers continue to run clear, researchers are investigating the use of bacteria to decolorize textile wastewater.

38  E-Textiles Series: Sensor Placement and Wearable Garments: Considerations for Medical and Fitness Data
   By Kilara Le
   Monitoring of health data, such as temperature, heart rate, and muscle activity, are some of the more useful applications of wearables. As new problem solvers come onto the wearables scene, there are more examples of sensors being integrated into sewn products.

Technology

44  Textile Needs and Constraints for Intravehicular Activity in Long Duration Space Flight, Part 3: Human Factors and Beyond Mars
   By Karl Aspelund
   This article is the final of three in a series of review articles focused on apparel and textiles for intravehicular activity (IVA) in space-based habitats and during long duration space flight (LDSF), such as a planned Mars mission.

   In the first article, the background of US National Aeronautics and Space Administration (NASA) programs regarding IVA development and the contribution of IVA textiles to launch weight were discussed. The application of antibacterials to increase garment life and affect crew hygiene and comfort was also discussed.

   The second article focused on the ability of IVA textiles to protect the crew from harmful exposure to a variety of hazards that will be encountered on long-duration space missions: flammability, radiation protection, dust management, and the ability to counteract the effects of reduced gravity.

   This final article covers issues involving IVA textile design and use, and crew physical and mental health and wellbeing.