

Andover Corporation supports Fresenius-Kabi (Fenwal)

Fresenius-Kabi, a medical device manufacturer, requested a set of filters to calibrate the hemoglobin monitor in their aspheresis medical device that separates blood into three components, plasma, hemoglobin, and platelets. The aspheresis device uses an optical monitor to measure the amount of hemoglobin in blood as it flows through a PVC tube. The optical monitor consists of two red and green LED's emitting light that passes through the blood as it flows through the tube. The light is then detected and the corresponding intensities are used to determine the amount of hemoglobin present in the blood.

Previously, the device was calibrated with 2 live blood samples that had to be packaged and shipped in dry ice packs to preserve the samples in transit until they could be inserted in the device to perform the calibration. This was time consuming and costly.

Fresenius-Kabi provided spectral data and images on the standard samples used for calibration. The team at Andover developed a two-filter calibration set to replace the live samples by matching transmission in the optically active red and green LED spectral bands and developed the process to reproduce the design. The filter designs utilize hard sputtered oxide optical coatings on absorbing filter glass.

