"Hair Reveals what People Conceal: Biometric Traits from the Chemical Analysis of Human Hair"

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Abstract

We demonstrate the ability to objectively classify the hair of different donors into soft biometric grouping factors such as sex, age group, body mass index (BMI), and physical activity. Classification is accomplished either through the quantitation of amino acids in human hair matrix, or through the precise measurement of naturally occurring stable isotopes of 13C/12C in each amino acid in the hair matrix. Additional examples of this approach include the ability to predict type II diabetes from human hair and to link blowflies to specific sources of carrion (decaying flesh).

Before delving into the details of this specific research thrust, the talk will first cover a brief summary of some other mass spectrometry research endeavors in our group, including: 1) the development of innovative MS-based fragmentation.