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by Ayna Yog

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The 7th International Conference on Science and Applied Science (ICSAS 2022)

Monday, 31 October 2022

Universitas Sebelas Maret, Central Java, Indonesia

Background

The **ICSAS 2022** conference is aimed to bring together scholars, leading researchers and experts from diverse backgrounds and applications areas in Science. Special emphasis is placed on promoting interaction between the science theoretical, experimental, and Education Sciences, engineering so that a high level exchange in new and emerging areas within Mathematics, Chemistry, Physics, and Biology, all areas of sciences and applied mathematics and sciences is achieved.

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Distinguishing of Leather Garment Raw Materials Using FTIR Spectroscopy Coupled to Chemometric Analysis

Wisnu Pambudi[1,b)], Risang Pujiyanto[1,c)], Raden Lukas Martindro Satrio Ari Wibowo[2,d)], and Ragil Yuliatmo[2,a)]

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Abstract. Leather jacket is the most popular fashion clothes made of garment leather. Garment leather generally derived from cattle, goat, sheep or pig skin. Muslim countries, including Indonesia, prohibit (haram) the products that derived from pig materials. If there are no labels on these products the costumers unable to find out the raw materials in leather products. Several techniques such as HPLC, PCR, GC-MS, electronic nose, and FTIR spectrophotometers have been carried out to distinguish the raw materials. The FTIR method is regarded as being affordable and simple to utilize. This study aims to evaluate the FTIR method coupled to chemometrics to distinguish the raw materials in leather garment. Lipid extracts derived from the various raw skin and leather garment were scanned using an FTIR spectrophotometer at 4000–450 cm^{-1}. There is the differentiation of spectral in two range of wavenumbers (3000-2800 cm^{-1} and 1200-1000 cm^{-1}). The FTIR spectroscopy coupled to chemometrics can distinguish pig skin, sheep skin, pig garment and sheep garment through specific peaks in infrared spectra. This can be used as an initial analysis on determining the existence of skin adulteration in leather garment.

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