

Silvia Serranti

Silvia Serranti is Assistant Professor at the Department of Chemical Engineering, Materials & Environment (DICMA), Faculty of Civil and Industrial Engineering, University of Rome "La Sapienza". She is a PhD geologist and she has been working for 15 years at the Raw Materials Unit of DICMA.

Research activity is mainly focused to primary and secondary raw material characterization and valorization in order to improve the industrial process performances and the product quality control and to develop innovative on-line sorting strategies, based on different sensing techniques.

The characterization of primary and secondary raw materials is carried out by different classical and advanced analytical methods: laser diffraction, spectroscopic techniques, such as Raman, FT-IR and hyperspectral imaging, micro-tomographic techniques, optical and electronic microscopy (SEM), classical chemical analyses (ICP, XRF), digital image processing (classical and hyperspectral). Investigated materials include: bottom ash from municipal solid waste incinerators, fluff from automotive shredder residues, construction & demolition waste, tyres, glass cullet, plastics from complex post-consumer waste, compost, biomasses, manure, e-waste. Also solid particles coming from the food industries are taken into account (dried fruits, cereals, ham, etc.), as well as materials from cultural heritage.

She is author of more than 100 scientific papers and she was, and currently is, involved in 11 different EU Research Projects. She is referee for several scientific journals

Pubblicazioni

1. Serranti S., Gargiulo A., and Bonifazi G., 2011, "Characterization of post-consumer polyolefin wastes by hyperspectral imaging for quality control in recycling processes", *Waste Management*, 31, 2217-2227.
2. Serranti S., Gargiulo A. and Bonifazi G., 2012, "Classification of polyolefins from building and construction waste using NIR hyperspectral imaging system", *Resources Conservation & Recycling*, 61, 52-58.
3. Serranti S., Cesare D., Marini F., Bonifazi G., 2013, "Classification of oat and groat kernels using NIR hyperspectral imaging", *TALANTA*, 103, pp. 276-284.
4. Ulrici A., Serranti S., Ferrari C., Cesare D., Foca G., Bonifazi G., 2013, "Efficient chemometric strategies for PET-PLA discrimination in recycling plants using hyperspectral imaging", *Chemometrics and intelligent laboratory systems*, 122, pp. 31-39.
5. Hu B., Serranti S., Fraunholz N., Di Maio F., Bonifazi G., 2013, "Recycling-oriented characterization of polyolefin packaging waste", *Waste Management*, vol. 33, pp.574-584.