

Dominique LAFON

PhD, HDR

IMT Mines Alès - (C2MA), pole RIME (Interaction Matériaux Environnement)

Training

1989 Ph.D with honors - Blaise Pascal University “Mathematical morphology and image analysis applied to the study of pyroclastic flows: pyroclastic flow deposits of Montagne Pelée volcano (1902 eruption)” - April 1989, Clermont Ferrand. Domain: Geology.

2010 Habilitation à Diriger les Recherches, Université de Pau et des Pays de l’Adour. Chimie, spécialité Interface Matériaux-Environnement.

Professional Experience

Mines Alès. Since January 1990.

Full time professor in the C2MA (Center of Materials Research). Her research is twofold:

1) Applied Research: through collaborations with industrial and institutional partners she looks for new metrological approach and better understanding of the visual behavior of natural and manufactured materials with a special interest for sparkling and other specific effects (gonio apparent) . She tries to find a metrological answer to the questions concerning the link between the production of materials and the “in use” properties, including the psycho visual properties.

2) Fundamental Research : She is searching for the relations and interaction between the human visual system and the optical properties of coloured and textured tangible surfaces by trying to develop an integrated approach. She is currently supervising 3 PhD theses.

She is involved as a member in the TC08-14 (specification of spatio-chromatic complexity) technical comity of the CIE (Commission internationale de l’Eclairage).

She is a member of the CNPA (Commission Nationale du Patrimoine et de l’Architecture) sect 6 (archeology). She participates to several research projects in the area of tangible cultural heritage (member of the scientific team of the Chauvet cave (Ardèche – France) – member of the research team of the Cussac Cave (Dordogne – France) – Member of the PHYT project : Taphonomie et préservation des Grottes Ornées : étude multiphysique de faciès calcitiques).

She contributes to several industrial research projects (SME and International Groups) mainly by experimenting to construct a colour imaging system to assist diagnostics based on colour and texture information.

She is involved in a program devoted to visual impairment and to the conception of a binocular prosthesis for visually impaired people. Her contribution concerns the use of colour and colour textures as pertinent markers of the environment in the process of acquisition/transformation/display. She also contribute to a better knowledge of the behavior of the camera regarding the capture of the colour information.

Relevant Publications

Konik S., Lafon-Pham D. : Apports de la colorimétrie et de la spectroradiométrie à la caractérisation in situ des peintures paléolithiques de la grotte Chauvet (Ardèche, France), CR Physique (Elsevier) à paraître.

Benkhaled I., Marc I., Lafon D., Colour contrast detection in chromaticity diagram: A new computerized colour vision test. Conference: 2017 IEEE Western New York Image and Signal Processing Workshop (WNYISPW), DOI: 10.1109/WNYIPW.2017.8356262

Medina V., Muller Th., Lafon D., Paljic A., Porral Ph. Objective colorimetric validation of perceptually realistic rendering: A study of paint coating materials, 2016, Journal of Electronic Imaging vol 25(6):p061609, DOI: 10.1117/1.JEI.25.6.061609

F. E. Da Graça, A. Paljic, D. Lafon-Pham, P. Callet, "Stereoscopy for visual simulation of materials of complex appearance", Electronic Imaging, Stereoscopic Displays and Applications XXV - Stereoscopic Displays and Applications XXV, États-Unis (2014)

A. Sawadogo, D. Lafon, S. D. Gbété, "Statistical analysis of rank data from a visual matching of colored textures", Journal of applied Statistics, 2014; DOI: 10.1080/0266763.2014.920775

B.

Konik S., Lafon D., Riss J., Aujoulat N., Ferrier C., Kervazo B., Plassard P., Reiche I. Étude des vermiculations par caractérisations morphologique, chromatique et chimique. L'exemple des grottes de Rouffignac et de Font-de-Gaume (Dordogne, France). PALEO, numéro spécial (2014), p. 311 à 321

N. Concha-Lozano, D. Lafon, N. Sabiri, P. Gaudon, "Color Thresholds for Aesthetically Compatible Replacement of Stones on Monuments", Color Research & Application, Vol. 38, Issue: 5, 356-363, (October 2013)