An Evaluation of Parchments’ Degradation
A Hybrid Approach

José Neves, José Machado, Guida Gomes
Algoritmi
Universidade do Minho
Braga, Portugal
{jneves, jmac}@di.uminho.pt,
mguida.mgomes@gmail.com

Ana Teresa Caldeira, António Pereira, António Candeias
Departamento de Química
Hercules Laboratory
Escola de Ciências e Tecnologia
Universidade de Évora, Évora, Portugal
{atc, amlp, candeias}@uevora.pt

Sérgio Sousa, Daniela Tereso, Ana Coelho
Departamento de Química
Escola de Ciências e Tecnologia
Universidade de Évora, Évora, Portugal
{saesousa, danny_tereso_}@hotmail.com,
anitacoelho485@gmail.com

Henrique Vicente
Departamento de Química,
Centro de Química de Évora
Escola de Ciências e Tecnologia
Universidade de Évora, Évora, Portugal
hvicente@uevora.pt

KEYWORDS
Parchment Degradation, Logic Programming, Artificial Neural Networks, Knowledge Representation and Reasoning.

ABSTRACT
Parchment stands for a multifaceted material made from animal skin, which has been used for centuries as a writing support or as bookbinding. Due to the historic value of objects made of parchment, understanding their degradation and their condition is of utmost importance to archives, libraries and museums, i.e., the assessment of parchment degradation is mandatory, although it is hard to do with traditional methodologies and tools for problem solving. Hence, in this work we will focus on the development of a hybrid decision support system, in terms of its knowledge representation and reasoning procedures, under a formal framework based on Logic Programming, complemented with an approach to computing centered on Artificial Neural Networks, to evaluate Parchment Degradation and the respective Degree-of-Confidence that one has on such a happening.