Guía para escribir el Trabajo Fin de Máster y Artículos Científicos

Revista

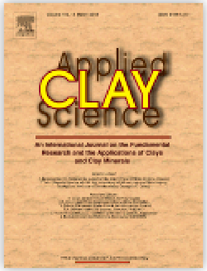
-Selección
a)Campo de investigación
b)Divulgación
b)Prestigio – Índice de impacto
c)Eficacia
d)Tamaño del artículo

Science: Max. 2500 – 4500 palabras
Journal of Cultural Heritage: Max. 5000 palabras

- Formato: Página web de la revista

Estructura

TFM	**Artículo**
Título	Título
Resumen	Resumen
Abstract	Keywords/Highlights
Índice	(Índice)
Introducción	Introducción
Materiales y métodos	Materiales y métodos
Resultados	Resultados
Discusión	Discusión
Conclusiones	Conclusiones
Conclusions	
Agradecimientos	Agradecimientos
Bibliografía	Bibliografía
Anexos	Leyendas (Figuras)
	Tablas
	Figuras (ficheros separados)



ISSN: 0169-1317

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An International Journal on Physics, Chemistry, Geology and Technology of Clays and Clay Minerals

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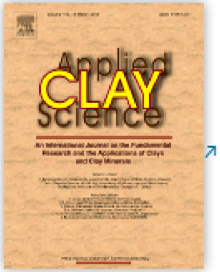

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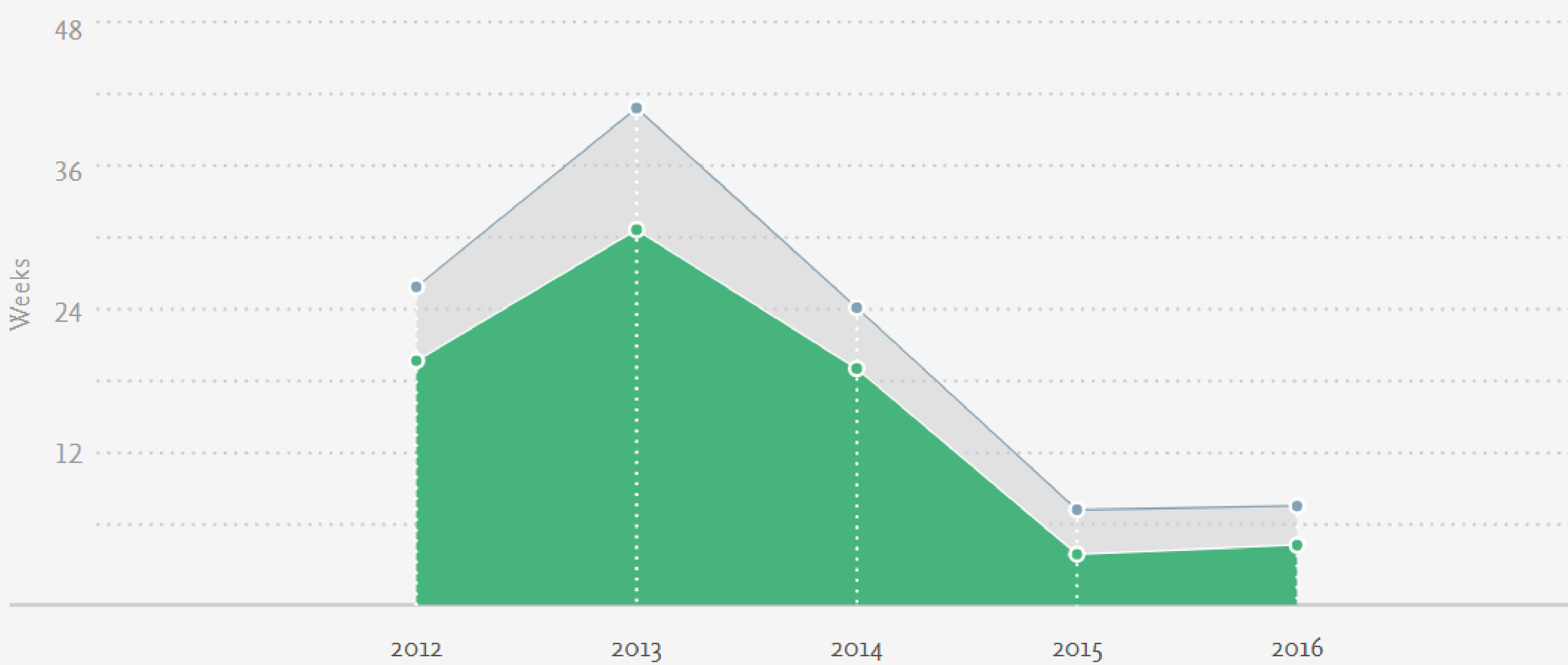

ABOUT REVIEW SPEED

Indication of review speed at the journal level.

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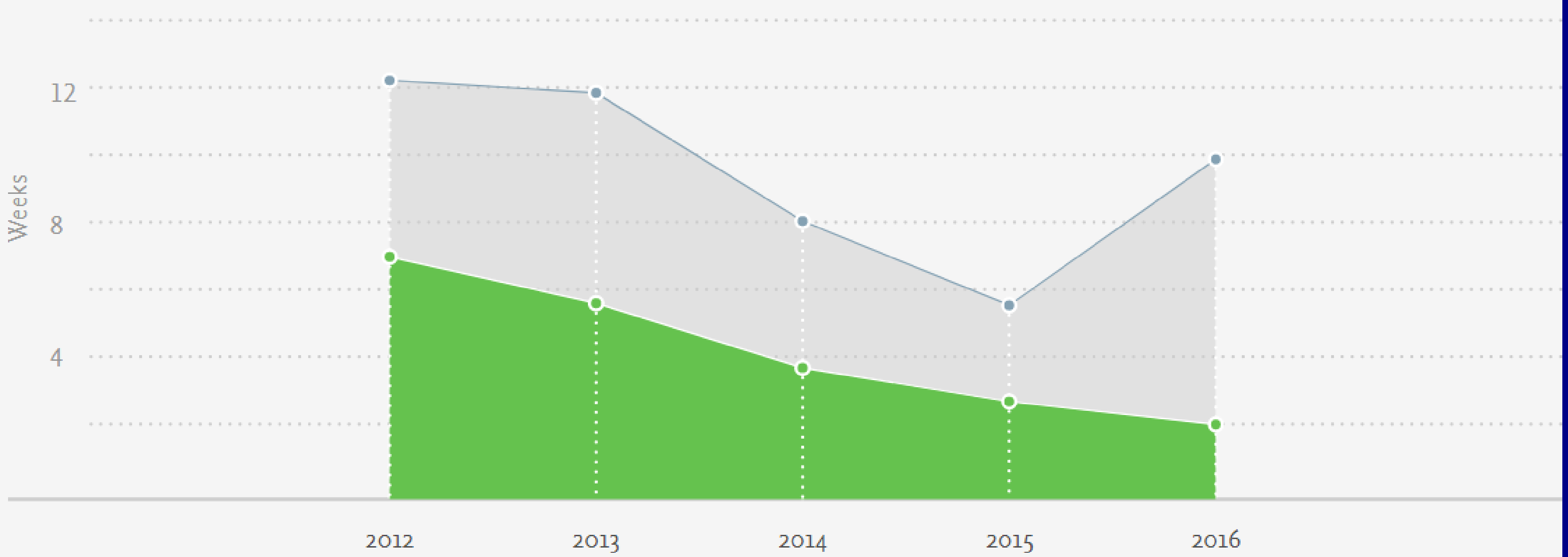

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Borrador

-Fuente: Times New Roman /Arial

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-Interlineado: doble

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-Títulos: negrita/cursiva

-Tiempo: Pasado

-(no se abusa de nota a pie de página)

Esquema

-Ideas principales

-Párrafos individuales para cada punto/idea

-Primera frase – idea clave

-Siguientes frases aportan información adicional

-Última frase para resumir/ introducir el siguiente punto/ idea

Título

Science: Max. 90 carácteres

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Journal of Cultural Heritage

ELSEVIER

Journal of Cultural Heritage 10 (2009) 1–8

Original article

Economic impacts of cultural heritage — Research and perspectives

Einar Bowitz*, Karin Ibenholt

Econ Pöyry, P.O. Box 5, N-0051 Oslo, Norway

Received 9 January 2007; accepted 15 September 2008

Título

Alteration behaviour of glass panes from the medieval
Pavia Charterhouse (Italy)

↕

Alteration process of historic
glass due to microbial attack

Estudio regional – Investigación con interés mas general
Conseguir que se cite el artículo – Índice de impacto/factor H

TRABAJO FIN DE MÁSTER EN CIENCIA Y TECNOLOGÍA EN PATRIMONIO ARQUITECTÓNICO

ESTUDIO DE LAS YESERÍAS DECORATIVAS DEL PATIO DE LOS ARRAYANES EN LA ALHAMBRA

ALUMNO: **GERARDO CABRERA FERNÁNDEZ**

TUTOR: **NICOLÁS VELILLA SÁNCHEZ**

UNIVERSIDAD DE GRANADA

12 de Julio de 2013

Max. 50 paginas
+ Anexos

Autores

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Resumen /Abstract

-Problema y antecedentes

-Porque se ha hecho la investigación (Objetivos)

-Resumen de los resultados

-Que importancia tienen los resultados

Science: max. 125 palabras
Journal of Cultural Hertiage: max. 500 palabras
TFM: sin restricción

Índice (TFM)

Introdución

-Cual es el problema/porque tiene relevancia

-Antecedentes para solucionar el problema (Literatura)

-Que se propone para la solución en este estudio y porqué

-Porque se ha hecho la investigación, que aporto yo (Objetivos del trabajo)

Materiales y Métodos

-Debe incluir información sobre todos los materiales utilizados en el estudio (*por ejemplo cantera del material pétreo, composición y fabricante del consolidante, etc*.)
(se puede citar)

-Preparación de las muestras

-Técnicas analíticas (*datos técnicos del equipo, parámetros del análisis*)

-Programas de ordenador utilizados para el análisis de datos

Materiales y Métodos

Table 1
Samples description.

Sample		Description	Chemical class of tannins [15,16]
Vegetable tanning materials	T1	Mimosa, sulphited commercial extract, orange-brown powder, FILK, Germany	Condensed tannins
	T2	Mimosa, commercial extract, pale yellow powder, CTIC, Portugal	Condensed tannins
	T3	Quebracho, sulphited commercial extract, dark red powder, FILK, Germany	Condensed tannins
	T4	Chestnut, commercial extract, dark brown granulate powder, CTIC, Portugal	Ellagitannins
	T5	Valonia, commercial extract, pale grey powder, FILK, Germany	Ellagitannins
	T6	Tara, milled pods of *Caesalpinia coriaria*, pale yellow powder, FILK, Germany	Gallotannins
	T7	Sumac, milled leaves of *Rhus sp.*, pale green granulate, FILK, Germany	Gallotannins
	T8	Sumac, lyophilized aqueous extract from milled *Rhus coriaria* leaves collected in Foz Côa (Portugal), pale green powder	Gallotannins
	T9	Rebollo (*syn* pyrenean) oak bark, lyophilized aqueous extract from milled *Quercus pyrenaica* bark collected in Penamacor (Portugal), brown powder	Ellagitannins, condensed tannins[a]
	T10	English (*syn* pedunculate) oak bark, lyophilized aqueous extract from milled *Quercus robur* bark collected in Lisbon (Portugal), brown powder	Ellagitannins, condensed tannins[a]
New vegetable tanned leathers	L1	Calf skin tanned with mimosa, UK	
	L2	Calf skin tanned with valonia, FILK, Germany	
	L3	Goat skin tanned with sumac, FILK, Germany	
	L4	Calf skin tanned with tara, FILK, Germany	
	L5	Calf skin tanned with sumac, retanned with chestnut and quebracho, UK	
	L6	Calf skin tanned with sumac, retanned with aluminium salts, UK	
	L7	Cattle grain split tanned with oak bark from *Quercus petraea*, FILK, Germany	
Historical leathers	HL1	Bookbinding, 19th century, private owner, Portugal	
	HL2	Upholstery, dark brown plain leather, 19th century, Germany	
	HL3	Upholstery, brown morocco leather, 19th century, National Palace of Ajuda, Portugal	
	HL4	Upholstery, dark green morocco leather, 19th century, National Railway Museum, Portugal	
	HL5	Upholstery, gilt leather, 18th century, National Palace of Sintra, Portugal	
	HL6	Upholstery, dark brown tooled leather, 18th century, Palace of the Dukes of Bragança, Portugal	

[a] Experimental data.

Libro de laboratorio: incluir fechas
toma de muestras
siglas de muestras
peso inicial de muestras etc.
preparación de muestras
análisis de muestras (SEM, TEM etc.)

Resultados

-Análisis de datos

-El orden de la presentación

-Claridad de la presentación

-Figuras y tablas
(no repiten los mismos datos)

Resultados

Table 3
BET surface area of Alhambra Formation soil with and without OM and treated with 5 M KOH for different periods of time.

Treatment time	Surface area (m^2/g)	
	With OM	Without OM
0	71.94 ± 1.63	82.10 ± 0.67
6 months	72.12 ± 6.72	82.89 ± 4.29
1 year	62.34 ± 3.97	65.54 ± 2.60
6 years	60.76 ± 0.33	84.49 ± 4.09

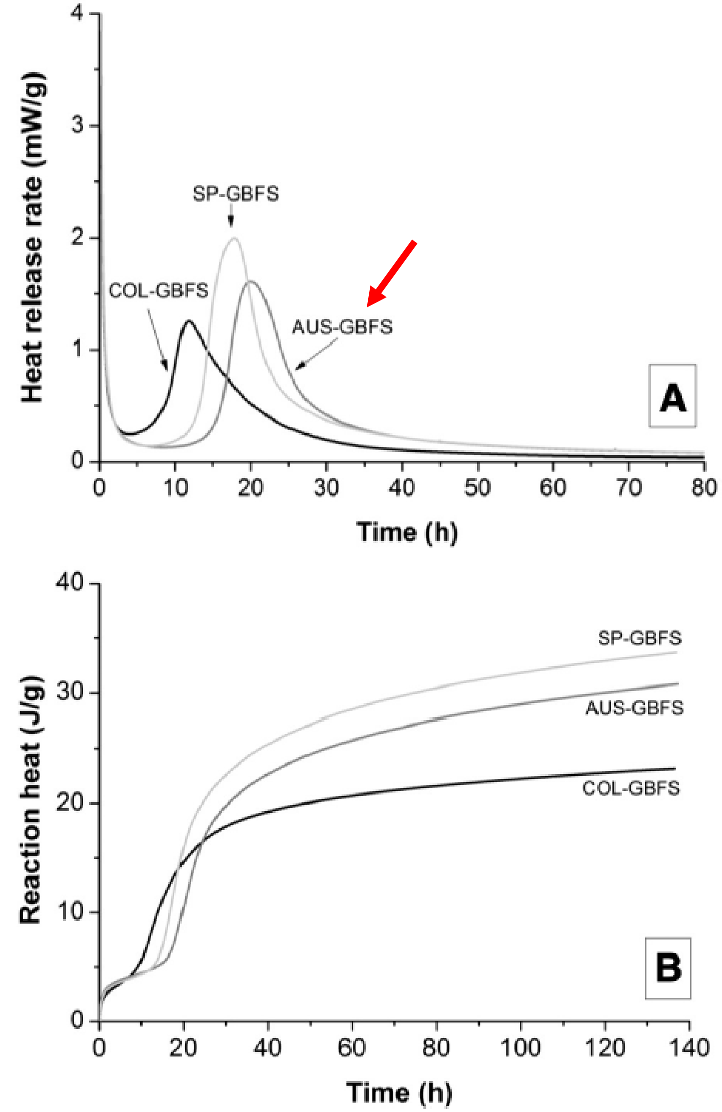

Fig. 2. (A) Heat release rate and (B) cumulative heat release of silicate-activated slag binders, as a function of the slag source.

-Numeración correcta

-Todas citadas en el texto en el orden correcto

-Los datos corresponden con los del texto

-Unidades usadas: sistemáticas

Resultados

Table 1
Composition of the experimental alkaline solutions (EAS)

EAS 1	$NaOH = 0.401$ g (kg H_2O)$^{-1}$ Na = 231 ppm (0.01 m)	pH 12
EAS 2	$K_2CO_3 = 138.2$ g (kg H_2O)$^{-1}$ K = 78,200 ppm (2 m)	pH 11.7
EAS 3	$KOH = 0.00561$ g (kg H_2O)$^{-1}$ $KCl = 74.55$ g (kg H_2O)$^{-1}$ (1 m) K = 39,104 ppm	pH 9.6
EAS 4	$KOH = 0.00561$ g (kg H_2O)$^{-1}$ $KCl = 223.65$ g (kg H_2O)$^{-1}$ (3 m) K = 117,304 ppm	pH 9.4
EAS 5	$KOH = 0.561$ g (kg H_2O)$^{-1}$ $KCl = 74.55$ g (kg H_2O)$^{-1}$ (1 m) K = 39,491 ppm	pH 11.8
EAS 6	$KOH = 0.561$ g (kg H_2O)$^{-1}$ $KCl = 223.65$ g (kg H_2O)$^{-1}$ (3 m) K = 117,691 ppm	pH 11.7

Table 3
Average structural formulae of starting smectites and run products calculated from electron micro
assuming total iron as Fe^{3+}

Sample	N	Si	Al IV	Al VI	Fe^{3+}	Mg	Mn
Na,Ca-smectite	19	3.91 (2)	0.09 (2)	1.51 (3)	0.21 (2)	0.28 (1)	0.01 (1)
+ NaOH pH 12	13	3.90 (2)	0.10 (2)	1.53 (1)	0.19 (2)	0.28 (2)	0.00 (0)
+ KCl 1 m, KOH pH 10	24	3.88 (2)	0.12 (2)	1.50 (2)	0.21 (2)	0.29 (1)	0.00 (1)
+ KCl 1 m, KOH pH 12	24	3.91 (2)	0.09 (2)	1.52 (2)	0.19 (2)	0.27 (1)	0.00 (0)
+ KCl 3 m, KOH pH 10	29	3.87 (3)	0.13 (3)	1.46 (2)	0.18 (3)	0.28 (1)	0.00 (0)
+ KCl 3 m, KOH pH 12	24	3.90 (2)	0.10 (2)	1.49 (1)	0.19 (1)	0.30 (1)	0.00 (0)
Na-smectite	12	3.93 (3)	0.07 (3)	1.53 (2)	0.21 (1)	0.23 (1)	0.01 (2)
+ K_2CO_3 1 m	19	3.77 (5)	0.23 (5)	1.27 (5)	0.31 (4)	0.38 (4)	0.01 (1)
(*) Ca-smectite	10	3.92 (3)	0.08 (3)	1.53 (3)	0.07 (2)	0.49 (4)	0.00 (0)

Interlayer charge (I.C.). Standard deviations are given in brackets: (1) = ± 0.01. Number of an

Discusión

-Interpretación de los datos considerando antecedentes

-Resultados están conformes con estudios anteriores

-Justificación de los resultados/ de la interpretación (alternativas a la interpretación)

-Discusión de la importancia y implicación de los resultados

Discusión

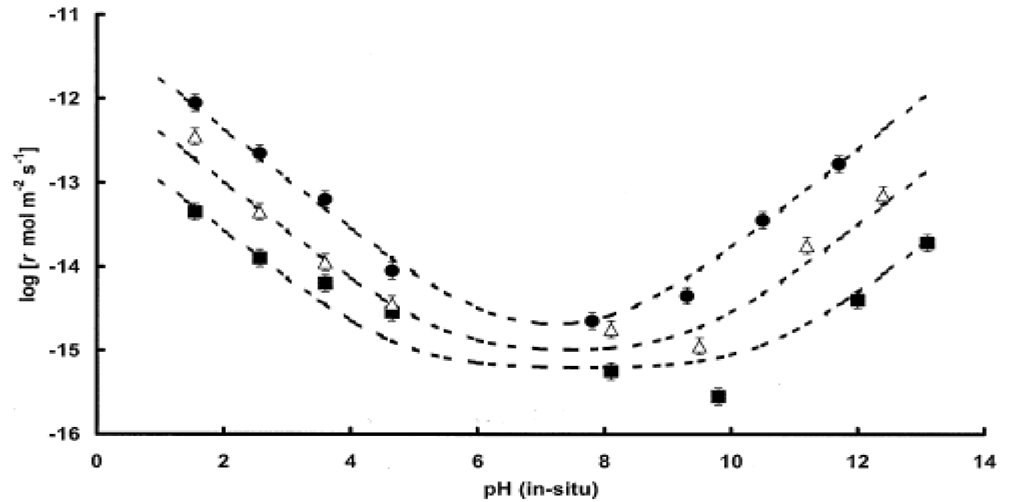

Fig. 4. Apparent Illite dissolution rates obtained from the late stage of experiments performed during the present study as a function of pH amd temperature: ■ 5° C △ 25° C and ● 50° C. The dotted lines represent the calculated rates as a function of temperature and pH using the parameters from equation 5. (Köhler et al., 2003)

Conclusiones

"Considerando los resultados obtenidas, llegamos a las siguientes conclusiones:....."

-Resumen de los resultados mas importantes de la investigación y su implicación

-Posible implicación para estudios futuros

Agradecimientos

Agradecemos a la ----, y en particular al Sr. Antonio ----,
por financiar este trabajo.
También agradecemos a la ONG- por la financiación,
y al Sr. Manuel---- - por la asistencia en el campo.
El agradecimiento se extiende también a la Dra. Ana ---- ayuda
en el análisis, y al Dr. John --- por la lectura de este manuscrito
(Andrew S. Kowalski, 23 January 2006).

Este investigación ha sido financiada por el --- dentro del proyecto
HFR2014-3455-67678

Bibliografía

Anexos

Anexo I

Anexo II

Revisión

-Corrección - herramientas del ordenador

-Revisión

-Traductor

Check list

¿Están todos los títulos/encabezamientos del mismo nivel en el mismo estilo?

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¿Son las citaciones de las referencias en el texto todas del mismo estilo?

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¿Todos los nombres propios se deletrean de la misma manera?

¿Se explican todos las variables matemáticas?

Carta al editor

-Titulo del trabajo, autores, breve resumen

-Porque debería ser publicado en esta revista

-Revisores - sugerencias

Como citar literatura

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Keywords: Photography; Digital image processing; Limestone; Oxford, England

1. Research aims

The purpose of this study is to introduce a cheap and robust methodology employing digital photography and computer image processing techniques for the quantitative measurement of areal surface colouration. Conventional spectrophotometric techniques sample points a few mm in diameter only, covering only a small area depending upon the number of readings taken. Indoor photography of stone sensors under controlled lighting conditions enables image capturing of entire faces several cm in diameter that can then be processed by an image software package. It is anticipated that this new approach will be easily applicable within cultural heritage conservation of stonework.

In this paper, the methodology will be described in detail and compared to an available spectrophotometric dataset for calibration. Apart from recent work on digital image analysis of building façades in Bath, Somerset [1] substantial innovative approaches towards the quantification of colouration of entire surfaces are lacking. It is necessary to develop image analysis methods as they have proved to be more conservative estimates than eye measurements [2]. This paper is an attempt to delineate a widely accessible, relatively inexpensive methodology that may be useful for monitoring surface soiling in the laboratory.

2. Introduction

Carbonaceous particles from oil fuels have been implicated in the discolouration of urban stone [3]. These black carbon particles, from incomplete combustion processes involved in soiling, have most of their origination in vehicular emissions (50–70%) and are known to reduce surface reflectance by ca. 30% [4]. Stones in polluted areas are grey or

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doi:10.1016/j.culher.2003.10.004

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Granada city (Rodriguez-Navarro 1994). It includes abundant red algae, shells of benthic foraminifera, mollusk, see-urchin spicules, serpullids and briozoans. The bioclasts are cemented by micritic calcium carbonate. Mercury intrusion porosimetry analysis of pore size distribution of the calcarenite showed that macropores are very abundant in this stone, with a mean pore radius of ca. 10 μm; however, smaller pores with secondary maxima at ca. 1 and 0.04 μm were also detected (Ruiz-Agudo et al. 2007). The presence of both types of pores makes this stone relatively susceptible to salt weathering (Rossi Menaresi and Tucci 1991). Hydric tests have shown that while the calcarenite rapidly absorbs water, it does not dry that fast (Rodriguez-Navarro 1994). As a result, salt solutions are rapidly taken up, but remain within the stone pore system for enough time to precipitate as harmful subflorescences. This behaviour contributes to the overall susceptibility of this limestone towards salt weathering (Cardell et al. 2008).

Recently, it has been proposed that additives which modify the crystallization process could be used to reduce salt weathering (Rodriguez-Navarro et al. 2000; Selwitz

Methodology

Sampling campaigns and damage a

The pillar on the south side of the alt
chosen as pilot area for monitoring
tribution as well as for treatment wit
(Fig. 1c). The calcarenite stone of th
plaster showed severe salt damag
increased in recent years (see the s
building by Cardell-Fernández (
environmental monitoring system
chapel to record relative humidity
temperature at the ground level (pil
level and outside of the building (ro
visits were undertaken at approxi
intervals between September 200
During each site visit, a damage sur
performed, by means of graphic
deterioration phenomena, salt samp
environmental monitoring data. A

l processes (i.e. crystallization pressure)
ımage to porous building stone are nor-
vith the drying of the porous material as
ıs in relative humidity, both of which
e transitions and crystallization. Many
nents have been developed in the past
tion and protection of porous stones
eathering. However, the majority have
ly partially successful; they did not fully
nent of salt damage (Price 1996) but
nhanced salt weathering. This is mainly
a fundamental knowledge of the under-
of salt weathering. In this sense, sig-
ıs been achieved in the past decades (see
orks by Steiger (2005a, b) and references
r, despite our improved theoretical
salt damage processes, this is rarely
e studies of salt deterioration in cultural
ıper, a series of site investigations were

undertaken to assess the dynamic behaviour of the salts within the surface of the stone in combination with recording of environmental conditions and deterioration phenomena. This gives useful indications for conservation purposes (Arnold and Zehnder 1991; Laue 2005). By adopting such an approach, it is possible to correlate qualitative empirical observations with scientific measurements, to identify not only the type and amount of salts present, but also the environmental conditions under which the salt damage is activated (Sawdy and Price 2005a, b).

S. Jerónimo Monastery (Granada, Spain) (Fig. 1) was selected for investigations of interior salt weathering phenomena due to the extreme salt damage that currently affects the stone, the plaster layers and the wall paintings in the main chapel interior, near the altarpiece (Cardell-Fernández 1998). The salt damage at S. Jerónimo appears in the form of severe disaggregation and delamination of the surface plaster layers, stonework and mortar joints. In addition, abundant salt efflorescences are visible on the interior walls of the main

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mance (plasticity, workability, and carbonation kinetics) of lime pastes.[3,4,14,53] However, our results show that this empirical observation is not always that straightforward. Here we have observed that the evolution of the rheological behavior upon aging time depends on the type of quicklime. As it has been already stated, freshly prepared FGP shows a high viscosity due to the massive presence of hexagonal platelike nanoparticles. However, these particles tend to rapidly aggregate into large clusters which markedly increase the mean particle size.[54] This results in a decrease in the viscosity of the putty, which reaches a minimum after a few weeks of storage.[15] These aggregates are hard aggregates that do not easily break by shearing of the suspension. Subsequently, viscosity tends to increase slightly after long-term storage (i.e., more than 1 year). In contrast, viscosity and yield stress of freshly slaked soft burnt lime putties (ACP) are orders of magnitude smaller than those of freshly slaked hard burnt lime putties (FGP). However, the viscosity of ACP tends to increase continuously with aging time. In agreement with Atzeni et al.,[5] aging not only increases the viscosity of lime putty but also results in a significant increase in the yield stress. The smaller amount of platelike nanocrystals

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wise, the initial optimal rheology of the freshly slaked lime putty could be preserved ("frozen") by adding organic compounds (e.g., polyelectrolytes) that upon adsorption on the positively charged surface of the platelike crystals prevent their irreversible aggregation. Studies are currently being performed to explore the effectiveness of such a procedure. Such studies may also aid in the understanding of the positive effects associated to the traditional use of natural organic additives (e.g., plant extracts, ficus or cactus juice, casein, just to name a few) in lime slaking.[55]

In the case of slaked lime putties prepared with a soft burnt quicklime, the initial structure of the suspension is formed mainly by noncolloidal prismatic portlandite crystals and aggregates of randomly oriented nanometer-sized $Ca(OH)_2$ particles, with a relatively smaller amount of nonaggregated colloidal platelike portlandite crystals. Early randomly oriented aggregation, which is associated to vapor slaking (i.e., drying-induced aggregation following water vapor bubble formation in the bulk of the suspension), seems to be reversible. Aggregates break during prolonged storage under water, releasing smaller aggregates as well as single nanosized portlandite crystals. Corrosion of prismatic faces in portlandite micrometer-sized crystals, leading to the

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