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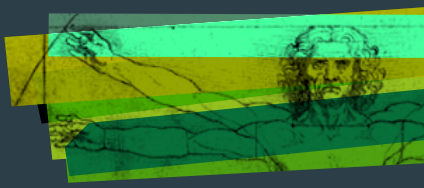
ORLÉANS | 2023



26-27 January 2023

Secondary glass productions in the early Middle Ages

LOCATION

Auditorium Charles Sadron
CNRS Orléans
3 avenue de la Recherche Scientifique
45071 Orléans - FR

CONVENORS

Dr Bernard Gratuze
Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

Dr Inès Pactat
Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

Dr Gaspard Pagès
Archeology and Science of Antiquity (ArScAn), CNRS / University of Nanterre - FR

Dr Nadine Schibille
Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

Dr Line Van Wersch
University of Liège - BE and Archeology and Science of Antiquity (ArScAn), CNRS / University of Nanterre - FR

PROGRAMME - REGISTRATION

registration@lestudium-ias.fr
www.lestudium-ias.com

LE STUDIUM Loire Valley Institute for Advanced Studies

Co-funded by the European Union

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ABSTRACTS

Secondary glass productions in the early Middle Ages

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Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

Dr Inès Pactat,
Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

Dr Gaspard Pagès,
Archeology and Science of Antiquity (ArScAn), CNRS / University of Nanterre - FR

Dr Nadine Schibille,
Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

Dr Line Van Wersch,
University of Liège - BE and Archeology and Science of Antiquity (ArScAn), CNRS / University of Nanterre - FR

ORGANIZING COMMITTEE

Sophie Gabillet, General Secretary

Dr Aurélien Montagu, Scientific Manager

Maurine Villiers, Communication and Events Manager

LE STUDIUM Loire Valley Institute for Advanced Studies • Région Centre-Val de Loire • FR

EDITO

Created in 1996 on the CNRS campus in Orleans La Source, LE STUDIUM has evolved to become a multidisciplinary Loire Valley Institute for Advanced Studies (IAS), operating in the region Centre-Val de Loire of France. LE STUDIUM has its headquarters in the city centre of Orleans in a newly renovated 17th century building. The amazing facilities are shared with the University of Orleans. In 2014 new developments and programmes linked to the smart specialisation of the Centre-Val de Loire region came to strengthen existing IAS cooperative relationships with the local and the international community of researchers, developers and innovators.

LE STUDIUM IAS offers to internationally competitive senior research scientists the opportunity to discover and work in one of the IAS's affiliate laboratories from the University of Tours, the University of Orleans, National Institute of Applied Sciences (INSA) Centre Val de Loire and ESAD Orléans, as well as of nationally accredited research institutions located in the region Centre-Val de Loire (BRGM, CEA, CNRS, INSERM, INRA, IRSTEA). Our goal is to develop and nurture trans-disciplinary approaches as innovative tools for addressing some of the key scientific, socio-economic and cultural questions of the 21st century. We also encourage researchers' interactions with industry via the IAS's links with Poles of Competitiveness, Clusters, Technopoles, and Chambers of Commerce etc.

LE STUDIUM has attracted over two hundred LE STUDIUM RESEARCH FELLOWS and LE STUDIUM RESEARCH PROFESSORS for long term residencies. In addition to the contribution in their host laboratories, researchers are required to participate in the scientific life of the IAS through attendance at monthly interdisciplinary meetings called LE STUDIUM THURSDAYS and gathering members of the regional scientific community and industries.

For the period 2015-2021, LE STUDIUM operates with an additional award from the European Commission in the framework of the Marie Skłodowska-Curie Actions (MSCA) with the programme MSCA-COFUND for the mobility of experienced researchers. LE STUDIUM is also the official partner of the Ambition Research and Development 2020 (ARD 2020) initiated by the Region Centre-Val de Loire, that supports the specialisation strategy around 5 main axes: biopharmaceuticals, renewable energies, cosmetics, environmental metrology and natural and cultural heritage.

Researchers are also invited and supported by the IAS to organise, during their residency and in collaboration with their host laboratory, a two-day LE STUDIUM CONFERENCE. It provides them with the opportunity to invite internationally renowned researchers to a cross-disciplinary conference, on a topical issue, to examine progress, discuss future studies and strategies to stimulate advances and practical applications in the chosen field. The invited participants are expected to attend for the duration of the conference and contribute to the intellectual exchange. Past experience has shown that these conditions facilitate the development or extension of existing collaborations and enable the creation of productive new research networks.

The present LE STUDIUM CONFERENCE named "Secondary glass productions in the early Middle Ages" is the 124th in a series started at the end of 2010 listed at the end of this booklet.

We thank you for your participation and wish you an interesting and intellectually stimulating conference. Also, we hope that during these days in our region some of you will see an opportunity to start a productive professional relationship with LE STUDIUM Loire Valley Institute for Advanced Studies and research laboratories in the Centre-Val de Loire region.

Yves-Michel GINOT

Chairman
LE STUDIUM

INTRODUCTION

If glass production from the Antiquity is quite well-known, the period after the fall of the western roman Empire is still a field to investigate.

In Western Europe, this period is even more important that it corresponds to the transition of the fluxing agent that will allow a complete reorganization of the production. That time also knew itinerant glassmakers travelling between abbeys and agglomerations who could contribute to the diffusion of new practices and recipes. Recently, several production sites have been discovered during excavations and research projects focused on that period, considering both archaeological aspects and the material compositions. Therefore, we would like to gather the scholars working on that topic in order to compare the sites of production, their tools and products on a large geographical scale.

Topics reached:

* Environments of the production:

- Inventories of workshops (means, tools, characteristics considered).
- Workshops in the landscape, in the agglomerations, monasteries or emporia.
- Locations of the workshops regarding the other crafts, the organization of the settlements, the different buildings.
- Location regarding the communication means and the resources.

*From the workshops:

- Structures, techniques and materials used by the glassmakers.
- What is produced and what is reused or recycled?
- Can we identify specific workshops for specific productions?
- Can we define a production from morphological, technical or chemical characteristics?
- Can we define products with specific social status (luxury products, Christian products, ...) ?

* The artisans:

- What was the status of the artisans.
- Did different glass artisans exist? Were beads and tesserae "glass productions"?
- What can we learn about the glassmakers form their tools (experimental archaeology)?

* Imputs and output to and from other crafts

- Metals for tools or coloring process.
- Ceramic for crucibles and kilns.
- Common practices and materials between pyrotechnologies.

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CONVENORS

SPEAKERS

CONVENORS

Bernard Gratuze

Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

3D rue de la Férollerie
45071 Orléans - FR

Email: gratuze@cnrs-orleans.fr
Tel: (+) 33 02 38 25 52 49

Bernard Gratuze is director of research at the Institut de Recherche sur les Archéomatériaux, Centre Ernest-Babelon (IRAMAT-CEB), CNRS/Université d'Orléans, France. His current research interests include the development of analytical protocols using laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) for ancient glasses to study their production and trade from Protohistory to the Modern Period. He studies glass making processes and recipes since the beginning of the second millennium B.C. with particular interest for transition periods: e.g. change from soda plant ash fluxes toward natron at the beginning of the first millennium B.C. or change from natron toward forest plant ashes fluxes at the end of the first millennium A.D.

Inès Pactat

Laboratoire TRACES – équipe TERRAE (UMR 5608), LabEx SMS

Université Toulouse - Jean Jaurès, Maison de la Recherche,
5 Allées Antonio Machado
31058 Toulouse Cedex 9- FR

Email: ines.pactat@gmail.com

Dr Inès Pactat received her PhD in 2020 from the University of Burgundy Franche-Comté on glass production and consumption in France between the 8th and 11th centuries. She is involved in French and Croatian archaeological fieldwork and, as a board member of the French Association for Glass Archaeology (AFAV), co-organised the 8th International Congress on Medieval Glass in Western Europe in Besançon in 2016. After an engineering position in the ERC project GlassRoutes led by Dr. Nadine Schibille, she will be a postdoctoral researcher on early medieval glass workshops at the University of Toulouse in 2023.

Gaspard Pagès

Archeology and Science of Antiquity (ArScAn), CNRS / University of Nanterre - FR

ArScAn – UMR 7041 - MSH Mondes
21 allée de l'Université
F-92023 Nanterre Cedex - FR

Email: gaspard.pages@cnrs.fr
Tel.: +33146692418

Gaspard Pagès is researcher at the CNRS, director of the collective projects of ArScAn and co-director of the team GAMA. He is in charge of the Masters students of roman archaeology at Paris-Nanterre University and he is responsible of several Phd students. He is one of the director of the interdisciplinary meetings about metal studies. Finally, he is involved in numerous research projects in Europe as well as in the Near East. He namely directed the FEDER project POI Pyrénées, FERMAPYR. Since some years, Gaspard Pagès takes part in the reflection about cross-craft interactions in pyrotechnologies.

Nadine Schibille

Archeomaterials Research Institute, Ernest-Babelon Center (IRAMAT-CEB) - CNRS / University of Orléans - FR

3D rue de la Férollerie
45071 Orléans - FR

Email: nadine.schibille@cnrs.fr
Tel.: +33238255212

Nadine Schibille obtained her Ph.D. in the History of Art from the University of Sussex (UK) in 2004. During her doctoral research she developed an interdisciplinary strategy to investigate the material and aesthetic aspects of light in the art and architecture of Byzantium. Following a Master of Science from the Institute of Archaeology at UCL (London, UK), Nadine held several postdoctoral positions at Stanford University, the Getty Institute, and the University of Oxford. She has been recruited by the CNRS as a senior researcher in 2015 to lead an ERC-2014-CoG project entitled GlassRoutes that traces Mediterranean-wide developments in the production, trade and consumption of glass using scientific methods, in particular LA-ICP-MS.

Line Van Wersch

University of Liège - BE and Archeology and Science of Antiquity (ArScAn), CNRS / University of Nanterre - FR

B5a allée du six août
4000 Liège - BE

Email: line.vanwersch@uliege.be
Tel.: +0032/477995406

Line Van Wersch got a Phd Thesis in Medieval archaeology and archaeometry. She is specialized on glass and ceramic. During her post-doctoral contracts, she studied Merovingian and Caroligian vessels, jewels and architectural glass from several sites in the Netherlands, in France, Belgium and Germany. She is currently lecturer at Liege University and Marie-Curie fellow at the CNRS (Arscan UMR 7041), working on the interactions between the pyrotechnologies of the early Middle Ages.

SPEAKERS

Sylvie Balcon-Bery

Sorbonne University

Centre André Chastel
Galerie Colbert - 2, rue Vivienne
75002 Paris - FR

Email: balconweb@aol.com
Tel.: +33147038450

Sylvie Balcon-Bery is professor in art history and archaeology of the Middle Ages at La Sorbonne Université and at the Centre André-Chastel. Sylvie Balcon-Bery is an art historian and archaeologist, specialized in stained glass from its origins to the 13th/14th centuries, and in religious complexes of the Middle Ages. She is a member of numerous thesis committees and scientific projects. She is notably a member of the Scientific Council of the Centre d'Etudes Médiévales d'Auxerre and the secretary of the Société Eduenne. Since many years, she director of archaeological researches in Burgundy, particularly in Autun.

Gry Barfod

Aarhus University

Aarhus University, Department of Geoscience
Høegh-Guldbergs Gade 2
building 1672, 324
8000 Aarhus C - DK

Email: grybarfod@geo.au.dk
Tel.: +4523823093

Gry H Barfod is a geochemist/petrologist who applies trace element and isotope systems, including Lu-Hf, Sm-Nd, Sr, Pb and Fe to glass, pigments pottery and organic materials to address provenance, trading and raw materials. She has pioneered the use of Hf isotopes for tracing Roman glass. Other interests include biomass, ancient fires as well as the application of geochemistry to medical sciences.

Camilla Bertini

Newcastle University[1] & Harvard University[2]

[1]School of History, Classics and Archaeology, Faculty of Humanities and Social Sciences
Newcastle University, NE1 7RU - UK

[2] History Department, Robinson Hall, 35 Quincy Street, Harvard University
Cambridge, MA 02138 - US

Email: camilla.bertini@newcastle.ac.uk
Tel.: +447454175902

Camilla is a Marie Sklodowska-Curie Global Fellow (WINDOGLASSMED project) and specialises in chemical (EMPA and LA-ICP-MS) and isotopic analysis (Sr, Nd, Pb) of ancient and historical glass. Her research is mostly dedicated to the identification of glass compositions and their raw materials during the 1st millennium AD focusing in particular on Western European artefacts. She is also interested in identifying and isolating secondary glass-working processes, such as recycling and mixing of glass compositions. She is also exploring the application of programming language (R) to glass analysis.

Grégoire Chêne

Liège University - Faculty of Science, Department of Physics, Atomic and nuclear spectroscopy, archaeometry / Art, Archaeology and Heritage

Bât. B15 Centre européen en archéométrie
Quartier Agora
allée du six Août 10
4000 Liège 1 - BE

Email: Gregoire.Chene@uliege.be
Tel.: +3243663681

Grégoire Chêne is a physicist and currently works at the IPNAS, Institute of Atomic and nuclear physics, oriented towards fundamental studies of atomic physics and towards the development of analytical methods based on the use of accelerated charged particles. Within the Archaeometry Centre (CEA) of the ULiège, Grégoire Chêne is in charge of the fixed laboratory and is particularly interested in IBA (ion beam analysis). For more than 15 years, he has been applying these methods, in particular PIXE-PGE, to the elemental analysis of a large number of ancient materials and objects, including many glass artefacts.

Jorge de Juans Ares

Universidad Complutense de Madrid- UNIARQ / Universidade de Lisboa

Facultad de Geografía e Historia - Edificio B
C/ Profesor Aranguren, s/n
Ciudad Universitaria
28040 Madrid - ES

Email: jordejua@ucm.es
Tel.: +3491394 6008

Archaeologist. Ph.D. in History from the UCM. Researcher in archaeometry between 2016 and 2020 at the Centre National de la Recherche Scientifique in the IRAMAT-CEB in Orleans (France) within the H2020 ERC funded project "GlassRoutes: mapping the first millennium economy" conducted by Nadine Schibille. Researcher in Medieval and Modern Archaeology (2021) in the School of Arts of the University of Lisbon (UNIARQ). Since November 2021 MSCA researcher in the Department of Prehistory, Ancient History and Archaeology of the Universidad Complutense de Madrid with the ERC, H2020-MSCA funded project "GLASS CENTRES. Production, raw materials, consumption and glass trade networks in the Iberian and Atlantic cities (14th-16th c.)".

Sophie de Bernardy de Sigoyer

Agence Wallonne du Patrimoine (AWaP- Service Public de Wallonie)

21a rue du Maréchal Foch
4400 Flémalle - BE

Email: sophie.debernardydesigoyer@awap.be
Tel.: +32478214058

Après une formation d'archéologue et d'historienne de l'art à l'Université de Liège, j'ai effectué un DESS en histoire des religions. Ma carrière d'archéologue de terrain, dans le secteur privé via des subventions du Service Public de Wallonie, s'est focalisée pendant plus de dix années (1999-2009) sur le territoire des villes de Huy et d'Amay. A partir de 2009, j'ai été intégrée au Service Public de Wallonie à la Direction de l'Archéologie et depuis 2018 à l'Agence Wallonne du Patrimoine (AWaP - SPW), au sein desquelles j'ai pratiqué l'archéologie préventive sur l'ensemble de la Province de Liège.

Alexandre Dissier

CNRS / Metallurgy and Cultures Laboratory

UMR 7065 IRAMAT CNRS
CEA - Centre de Saclay, Bât. 637 bureau 110B
91191 GIF-S/-YVETTE Cedex - FR

Email: alexandre.disser@cnrs.fr
Tel.: +33169082491

Alexandre Disser is a researcher at CNRS, specialized in archaeometallurgy, more specifically in iron metallurgy. After a Master dedicated to mining archaeology and an experience in preventive excavations, he completed a PhD focused on studying iron smelting organization and exchange networks involving ancient metallurgical areas in Lorraine (north-eastern France). To this end, he has developed skills in the physico-chemical characterization of materials and in data processing (multivariate statistics, spatial analysis, etc.). He is currently developing a research programme on the structuring of production and exchange systems that developed in the early Middle Ages in Western Europe. He also collaborates in research programs in industrial archaeology.

Julian Henderson

University of Nottingham

Department of Classics and Faculty of Medicine, Dentistry and Archaeology, School of Humanities,
University Park, Nottingham, NG7 2RD - UK

Email: julian.henderson@nottingham.ac.uk
Tel.: +447815415669

Julian Henderson has specialised in the scientific analysis of ancient materials for more than three decades while working as a post-doctoral fellow at the Smithsonian Institution and Oxford University followed by academic appointments at the Universities of Sheffield and, since 1995, Nottingham. He has had visiting appointments at the Universities of Oxford, Melbourne, University of Science and Technology (Beijing), Northwest University (Xi'an) and Nottingham University (Ningbo). He has published several books and more than 250 journal papers and book chapters. His primary research project is the International Silk Road Project.

Caroline Jackson

University of Sheffield

10-16 Minalloy House, Regent St.
Sheffield, S10 4NR - UK

Email: :c.m.jackson@sheffield.ac.uk
Tel.: +441142222918

Professor of Archaeological Materials at Sheffield University, Caroline Jackson has a degree in Archaeology and took an MA and PhD in Archaeological Sciences, specialising in the study and analysis of archaeological materials. She held posts as a Research Assistant at the University of Toronto (working at Carthage) and the University of Cardiff, and worked as a Teaching Fellow in Archaeology at Sheffield. She conducted archaeological fieldwork projects many countries. She is one of the most renown glass specialist and member of AIHV and The Society of glass technology.

Andreas Kronz

Georg-August-Universität Göttingen, Geowissenschaftlisches Zentrum (GZGE, Mineralogie - Petrologie)

Goldschmidtstraße 1
D-37077 Göttingen - DE

Email: akronz@gwdg.de
Tel.: (+)495513929336

I studied mineralogy at the Johannes Gutenberg University in Mainz, where I received my diploma in 1992. In 1997, I received my PhD on an archaeometallurgical study of medieval iron technology in central Germany. During this time I intensified my work on electron microprobe methodology (EPMA) and helped to install a new EPMA in Mainz in 1996/97. Afterwards, I was responsible for setting up a new EPMA laboratory at the Institute of Geochemistry at the University of Göttingen. Here I started to work together with Prof. Wedepohl on the analysis of glass. Improving the quality of quantitative chemical analysis of glass and minerals is a focus of my work. Since 2021, we have been operating a new Field Emission Gun EPMA in the Petrology group of the Department of Mineralogy in Göttingen.

Mette Langbroek

Leiden University

PO Box 9500
2300 RA Leiden
The Netherlands

Email: m.b.langbroek@arch.leidenuniv.nl
Tel.: (+)310613903925

Mette Langbroek is a PhD researcher based at Leiden University. She specialises in early medieval exchange networks, Merovingian beads, and combines chemical analyses of these beads with new ways of thinking about Merovingian archaeology. She conducts her research for the ERC project Rural Riches. The main question of this project is: What role did the mass of the rural population play in post-Roman economic development in north-western Europe and what was the nature of the economy? Mette's role is to gain a better understanding of how exchange was organised in the 6th century AD. The proxy she uses to study exchange are beads, as they are a well-represented category of 6th century archaeological finds, and took part in both local and long-distance exchange.

Aurore Louis

INRAP Champagne-Ardenne

15 avenue de Valmy
51000 Châlons-en-Champagne - FR

Email: aurore.louis@inrap.fr
Tel.: +33762012781

Aurore Louis has a Phd in archaeology and she is a glass specialist at INRAP, Institut National de Recherches Archéologiques Préventives, Grand Est Nord. She works on the antique and medieval periods. She defended her doctoral thesis entitled: "La place du mobilier en verre dans les sépultures gallo-romaines et mérovingiennes du nord de la France (Ier s. av. J.-C. - VIIe s. ap. J.-C.) - Offrandes et pratiques funéraires" in 2018. Aurore Louis is also the treasurer of the AFAV (association française pour l'archéologie du verre). She has written numerous articles on glass. She also leads excavations and projects on glass production.

Elisabetta Neri

European Center for Archaeometry

U.R. Art, Archéologie et Patrimoine
IPNAS,Sart Tilman B15
Universite de Liege, 4000 - BE

Email: eneri@uliege.be
Tel.: +33625998315

Elisabetta Neri is a Late Antique and Early Medieval archaeologist. She holds a PhD from the University of Milan. After two post-doctoral fellowships, at the Labex RESMED and at the Paris-Sorbonne University (MONARIS and LAMS), and two years as fixed-term researcher at CNRS, UMR 5060, IRAMAT, Orléans (ERC GlassRoutes), she has won a Marie-Curie individual fellowship at the University of Liège. She is an associate researcher at UMR 8167, Orient & Mediterranée. She is teaching in French and Italian Universities (Université Paris-Sorbonne, Université Cergy-Pontoise, Università Cattolica del Sacro Cuore di Milano). Her scientific work follows a multidisciplinary approach (archaeology, archaeometry and written sources) and is focused on the craft techniques (wall mosaics, glass, polychromy of statues, medieval copper).

Sarah Paynter

Historic England - Investigative Science Team / National Specialist Services Department

Fort Cumberland, Fort Cumberland Road,
Eastney, Portsmouth, PO4 9LD - UK

Email: Sarah.Paynter@HistoricEngland.org.uk
Tel.: +33392856782

Sarah Paynter studied Materials Science and worked in industry for several years before obtaining a PhD in Archaeological Science. Since then she has worked for Historic England (previously English Heritage) at Fort Cumberland Laboratories in the materials science team. The team use scientific techniques to investigate heritage materials from archaeological sites, wrecks, buildings and archives of all periods, mainly from England, and also provide advice and training to the archaeological sector. Sarah is particularly interested in glass, ceramic glazes and iron.

Yvette Sablerolles

University of Nottingham / Department of classics and archaeology

University park, Nottingham
NG7 2RD - UK

Email: yvettesablerolles@gmail.com
Tel.: +441159514840

Yvette Sablerolles obtained the equivalent of an MA in provincial Roman archaeology at the former Institute of Pre- and Protohistory, University of Amsterdam in 1992. After moving to the UK in 1996, she was a Research Associate in the Dept. of Archaeology of Nottingham University for many years. Her research interests are Roman and early medieval glass, early Islamic glass, glass bead production and glass vessel production waste. Her projects include the medieval glass of the only excavated Dutch monastery at Susteren, Limburg Province and a large find of Roman tesserae from the northern Dutch terp region at Wierum (Groningen Province). She has recently collaborated with Hong Ma, Julian Henderson, Simon Chenery and Jane Evans on a NAR publication commissioned by the RCE (Cultural Heritage Agency of the Netherlands) on the early medieval glass production waste from the Netherlands

Søren Sindbæk

Centre for Urban Network Evolutions, Aahus University

Moesgaard Allé 20, DK-8270 Højbjerg - DK

Email: farksms@cas.au.dk
Tel.: (+) 45 22806539

Søren M. Sindbæk explores how networks shaped people's lives in the past and how they have shaped the world today. He is particularly interested in the cities and trade of the Viking Age. Søren has worked at the University of York (UK), and since Aarhus University, where he has been a professor since 2015. He is, among other things, known for the discovery of the Viking Age fortress Borgring, as well as excavations and artefact research in Ribe, Scandinavia's earliest town.

Alicia Van Ham-Meert

Leuven University

Celestijnenlaan 200e - box 2410
3001 Leuven- BE

Email: alicia.vanhammeert@kuleuven.be
Tel.: +3216372742

Alicia Van Ham-Meert is a post-doctoral researcher at the KU Leuven, she specialises in elemental and isotopic analysis of ancient materials, in particular 1st millennium glass for provenancing purposes and to understand the development and exchange of glass recipes in this period.

Olivier Vrielynck

Walloon Heritage Agency

Rue des Brigades d'Irlande 1
5100 Jambes - BE

Email: olivier.vrielynck@awap.b
Tel.: +3281332480

Having Master degrees both in physics and in archaeology, Olivier Vrielynck is presently archaeologist at the AWAP (Walloons'heritage agency). He directed the excavations of the Merovingian cemetery of Bossut-Gotchain and he is actually in charge of the publication of several Merovingian sites. Olivier Vrielynck is particularly interested in early medieval beads. Together with Fr. Mathis and B. Gratuze he analyzed thousands of them. He is also involved in many archaeometrical studies, namely those concerning glass.

Helena Wouters

KIK / Royal Institute for Artistic Heritage

Parc du Cinquantenaire 1
1000 Bruxelles - BE

Email: leen.wouters@kikirpa.be
Tel.: +3227396846

Helena Wouters received her doctoral degree in Chemistry at the University of Antwerp. She is full staff member of the laboratories of the Royal Institute for Cultural Heritage, Belgium. As conservation scientist she provided much expertise in the field of metals, precious metals, enamels, glassware (from antiquity till recent times) and Stained-glass windows. Involved in a variety of service-related records covering questions of materials used,craft-techniques, conservation problems, degradation but also to authenticity problems of art objects. Additionally, she was invited various times as member of PhD Jury's and had initiated as co-promotor in PhD theses.

Martin Zimmermann

Institution

Nordlandring 22, D – 23570
Luebeck - DE

Email: BACKBORDMARTL@T-ONLINE.DE
Tel.: +494502777305

After Studies in history and philosophy at the Ludwig Maximilian University of Munich, Martin Zimmerman studied "Lehramtsstudium für Berufsschule" in Munich. He spend one year of study abroad at the Université du Havre, France. He is actually teacher at the Berufsschule der Handwerkskammer Lübeck; apprenticeship as a glazier. He also studied History at the University of Hamburg (Magister Artium). He is Doktor der Philosophie and passed his PDH thesis at the University of Hamburg on „Glashandwerker im Frühmittelalter".

Les infondus - Chloé Gervaz & François Dubois

Les infondus

28 rue hohfurst
57620 Lemberg - FR

Email: lesinfondus@orange.fr
Tel.: +33630333207

Chloé Grevaz and François Dubois met at the École Nationale du Verre in Yzeure (03) before being hired by the Cristalleries Royales de Saint-Louis, where they continue to refine their skills and techniques. During these 8 years in the factory, François, assisted by Chloé, obtained the title of "Meilleur Ouvrier de France" in 2011. At the same time, they follow the teachings of Allain Guillot, in Dordogne. Les infondus were born in 2014. Since then, they have continued to practice their art on the roads of Europe during nomadic demonstrations and in their Moselle workshop around archaeological experimentation, the production of historical facsimiles and contemporary tableware..

ABSTRACTS

Nadine Schibille

First millennium CE natron glass production groups and their markets: a compositional perspective

Scientific methods for analysing archaeological glass have improved considerably over the last 20 years, which has led to the refinement of compositional characteristics of first millennium primary glass production groups manufactured in Egypt and the Levant. The available analytical data permit the identification of general chronological and geographical patterns in the circulation of the different glass groups and their transformation. The centralized glassmaking model established during the Roman Empire survived well into the Islamic period after the Arab conquest of the eastern Mediterranean at the beginning of the 7th century, even though Egyptian glass groups are rarely found in the western Mediterranean after the 6th century.
In this talk, I will discuss the compositional discriminants and chronological ranges of first millennium natron-type glasses. It is important to emphasise that the focus is on the date of primary production and not on the possible reuse/recycling of the different glass groups and their afterlife. Despite the absence of absolute quantitative information about the volume of glass that was produced, it is possible to discern changes in the relative abundance and variety of glass finds. This presentation draws particularly on the changes that we see in the archaeo-vitreous records of Spain and Sicily as proxies of wider trends in the circulation of glass groups in the western Mediterranean.

Martin Zimmermann

The Role of Textual Evidences in the Study of Early Medieval Glassmakers

The history of early medieval glassmakers has so far been mainly derived from archaeological sources, and archeology is here clearly the "Leitwissenschaft". Significant in this context was the discovery more than half a century ago about a new glass recipe, which began to spread in Europe from the "deepest" Early Middle Ages; the question of how this could develop is still the subject of various discussions.A new contribution was developed by Alexis Wilkin in 2019; accordingly, the early medieval glass artisans owed the technological foundations for their new recipe to their collaboration with metal artisans.

There is some clear evidence for this theory, such as the glass production at the Melle silver mine, maybe also in the early medieval castles of Breisach and Sulzbach, but besides the technical innovation the social conditions of the artisans should not be forgotten. The glassmakers of the early Middle Ages were not free entrepreneurs, in the historical texts they are dependent of their landlords. So they were in all probability integrated into the manor-system and had to take into account the different requirements and obligations of the landlords and market authorities for commodity procurement, production, distribution and sales.

However, this dependency gives rise to a purely historical method of investigation: the finds of early medieval glassworks manufacturing the new glass recipe – in addition to Melle the archaeological sites of Méru, Corvey, La Milesse and Distré are being investigated - can be assigned to the territories of specific landlords. The paper examines the extent to which family connections can be made visible in the passing on of glassmakers belonging to these families, perhaps also in the development of the new glass recipe.

Aurore Louis

Can the vessel reflect the workshop? An attempt at typological mapping

Within the framework of the doctoral thesis, we have compiled a large corpus of nearly 2000 glass vases from Gallo-Roman and Merovingian burials in southern Gaul. This important catalog of whole vases, spread over a large geographical area, and systematically mapped, has allowed us to visualize the concentration of certain series of vases in specific regions. The groups are characterized by the quantitative over-representation of the same type, by the redundancy of precise morphological variants or by the choice in the tombs of the same vase assemblage. Of course, these concentrations do not allow us to identify the local workshops that produced these forms, but they do indicate a commercial phenomenon that was underway in these regions that deserves to be studied. The systematization of this method on a larger scale would allow, in the end, to reconstruct the diffusion of certain forms and, perhaps, coupled with the discovery of workshops, to estimate the places of production.

Caroline Jackson & Sarah Paynter

Glass supply and use in early Medieval Britain

Published data on post Roman and early medieval assemblages (5th to 8th centuries) from Britain have been inconclusive in understanding what is happening to supply of glass and the potential for different productions at the end of the supply chain for glass in this period. This was a time of great change with different cultural groups from north west and central Europe making their mark on Britain, but not all equally in all regions; in addition to this Britain was still a land mass with an inhomogeous population with relics of different cultural groups who were either indigenous or who had settled in the previous few centuries.

Glass is generally scarce in Britain at this time, and usually very fragmentary when found at settlement sites. Changes in archaeological practice have led to more glass being recovered in recent excavations however, commonly from environmental samples from middens and pits. These finds can also be more accurately dated, by carbon dating the associated environmental remains, and this is leading to an improved understanding of glass-working and consumption in Britain throughout this period. From current research it is clear that glass was still being supplied to Britain from large glass production locations in the eastern Mediterranean, primarily Egyptian and Levantine sources. . Overtime there are changes in the source of the glass used and these patterns in supply echo those observed more widely in Continental Europe. However, the common practice of recycling often means that distinguishing the output of different secondary workshops, fabricating vessels from raw glass, based on chemical composition still often proves challenging. Glass is subject to changes in composition caused by secondary production due to contamination from fuel ash and or colouring elements that were incorporated into the batch and potentially the loss of volatile elements at high temperatures or during repeated and extended heating. It is also problematic to ascertain how many times a glass has been recycled which affects its overall composition, or if a glass has been recycled at all if it is mixed with the same composition of glass and recycling was limited. Archaeological evidence for glassworking is also scarce, only starting to become evident from the 6th century, initially associated with developing monastic sites, along with evidence for glazing and in common with other high temperature crafts

This paper examines vessel glass assemblages from sites located throughout Britain from both potential glass-working sites and from consumption assemblages, which suggests a temporal and spatial change in supply of both Egyptian and Levantine glass types and the glass from cullet, particularly in the 7th and 8th centuries when recycling is very evident. It will attempt to untangle some of these patterns by the examination of vessel forms and compositional groups from sites from the north and south-west, and into northern and southern Britain from the 5th to 8th centuries in order to elucidate patterns of supply and use through time, and the influence of different cultural groups on what was used and made. Between these different regions, there are variations in the styles of glass vessel used, and differences in drinking cultures and funerary practices, which influence the range of archaeological glass recovered. There is now growing evidence that not all sites were supplied equally and that this in part may be due to different supply chains, geographical factors not necessarily related to distance from supply networks and also different cultural groups who may have used glass differently, both in reworking and what was made.

Sorren Sindbaeck & Gry Baford

Bead workshops in eighth-century CE Ribe: technology, provenance, and chronology

Since 1975, excavations in Ribe, Denmark, have uncovered a series of glass bead-making workshops from the eighth century AD. New examples were examined in excavation conducted 2017-18 within the Northern Emporium research project, funded by the Carlsberg Foundation. This work provided the first opportunity to examine the spatial organization of the workshops. It also provided a more detailed chronological resolution for the production than has previously been possible.

Together with materials from earlier excavations, the more than 18,000 glass finds from the new excavations provide the basis for a series of ongoing chemical glass studies, conducted within the Danish National Research Foundation's Centre for Urban Network Evolutions (UrbNet) in Aarhus, together with the Aarhus Geochemical and Isotope Research Platform (AGIR). These analyses demonstrate that the Ribe glass bead makers had a significant ability to control and modifying the colour and opacity of glass-mass.

Meanwhile, our analyses and the exceptionally strong chronological phasing which frame them, also has key significance for the understanding of trade flows and interactions in Northern Europe at the beginning of the Viking Age. The paper revisits the chronology of selected bead types in the eighth and ninth century.

This presentation reviews the results of these research initiatives, and seeks to assess their significance for an understanding of secondary and tertiary glass productions in the early Middle Ages.

Andreas Kronz

Early Medieval glass from Cologne and its relation to glassfinds in the Rhineland and Central Europe

The Rhineland appears to be one central region for secondary glass manufacture since the beginning of Roman occupation. Although located on the periphery of the Roman Empire, Cologne (Colonia Claudia Ara Agrippinensium, CCAA) and the adjacent areas play an important role in the development of glass workshops that were probably in continuous operation from Roman times to the Carolingian period.

In the research project "Cologne Harbour " we have chemically analyzed numerous well-dated glasses predominantly from excavations of the Cologne city center for major, minor (EPMA) and trace (La-ICPMS) elements (Dodt 2022, Kronz 2022, and further references therein). Essentially, these are shards of hollow glass, but also a few window panes, beads, tesserae and many relics of glass processing, such as crucible fillings, and processing remains that prove active workshops. Within the framework of these investigations, the glass from the late Roman glassworks at Hambach (Gaitzsch et al. 2000), the necropolis Krefeld-Gellep (Roman-Frankish, Wedepohl et al. 1997), and the Frankish glass workshop Hasselsweiler (2nd half of the 5th century, Päffgen and Wedepohl 2004) were analyzed again in order to obtain trace element data and a uniform data set as well.

We also examined samples from a Roman workshop in the Cologne city, as well as numerous early medieval trading sites as far as the North Sea and Baltic Sea areas. In Frankish times, Cologne can be considered a manufacturing site for glassware that was exported far to the North. Soda-lime glass (SLG) was the predominant main glass type until the Carolingian period, when the new glass type wood ash glass first appeared on the right Rhine periphery of the Frankish Empire towards the end of the 8th century. The subtypes of the SLG ("production groups"), which are sufficiently known from the literature, can be largely confirmed for the examined glass. In the meantime, the working group in Göttingen has compiled a glass data collection of nearly 15000 glass analyses, which allows comparisons contextualized in time. Questions concerning the temporal persistence of individual production types are discussed in detail in this paper. The definition and delimitation of the individual raw glass types is still a problem, also because different proportions of cullet were recycled at all times.

Yvette Sayblerolles & Julian Henderson

Glass working in the early medieval Netherlands

This project on the scientific analysis of Dutch secondary glassworking dating to between Merovingian and to late Carolingian periods was commissioned by the Cultural Heritage Agency (RCE) of the Netherlands. Probably the most comprehensive evidence for Merovingian bead making in Europe comes from the Maastricht-Jodenstraat site where 750 objects were found in a pit, including 38 crucible fragments with glass attached. Most contained opaque yellow glass. Using LAICP-MS and an SEM we have investigated the production of lead-tin yellow II and demonstrated it was used in the manufacture of bead production on the site. We will discuss why there was a dominance of yellow glass, including more evidence for working it from Merovingian Wijnaldum. Scientific analysis of smaller scale evidence for glassworking from Carolingian emporium of Dorestad shows that there was a much higher proportion of recycled glass in use compared with Merovingian glass from Maastricht. Rare evidence of possible window production from 8th-9th century Susteren will also be discussed. Twelve crucible fragments from Utrecht-Domplein have pale green glass attached, some marbled with streaks of red glass, perhaps used for making stained glass in this 8th century bishop's seat. Excavations of the late Carolingian and Ottonian proto-town of Deventer produced several chips of glass and heat affected fragments. Pristine imported Egyptian II soda glass, mixed alkali glass and potash glass were found.

Helena Wouters, Line Van Wersch, Chantal Fontaine, Catherine Peters, Sophie de Bernardy de Sigoyer & Bernard Gratuze

The workshops from Huy, materials and tools, in their regional context

J. Henning noticed that, during the early Middle Ages, craft activities left the ancient agglomerations for rural areas. Simultaneously, important technical changes are attested at the transition between the Merovingian and Carolingian periods, one of the most important being the replacement of soda glass by potash glass. Though, the mechanism of this transition as well as the workshops are not well known.

Until the 8th century, in the Mosan region, only secondary production occurs. In Huy, as well as in Maastricht or Stavelot the traces were found. These are generally fragments of vitrified crucibles, but also production waste, including tears, threads and nets, balls, shapeless masses of glass and finally fragments of objects as well as pieces of a dismantled kiln. In Dinant, Namur and in Liège, crucibles are attested. Still, in the Mosan region, so far, the only site with production structures in place is "Aux Ruelles" in Huy.

On this site, of the four known kilns, at least two can be linked to glassmaking. The first, circular and 75 cm wide, has tile and clay walls. In its filling were glass slag and fragments of crucibles. According to the ceramic material, the kiln can be dated to the 6th century. Amongst the glass vessel fragments, it is almost impossible to distinguish the products made on the site from older fragments intended for recycling. So, for glass study, we focused on production waste such as tears and moils. This paper will mainly concentrate on the results of LA-ICP and SEM-EDX analysis results as well as on the crucibles studies in order to replace the production from Huy in its regional an international context.

Inès Pactat & Bernard Gratuze

Early medieval secondary glass workshops in Northern France

The recent discovery of a secondary glass workshop in front of the ancient abbey of Saint-Amand-les-Eaux (Nord, France) offers the opportunity to inventory and re-examine several structures in northern France. We will then examine the evidence of glassmaking from the 7th to 10th centuries. The study will first focus on the archaeological remains and their significance: raw glass, glassblowing waste, droplets, cullet, crucibles, furnaces, etc. We will try to replace them in each phase of the "chaîne opératoire" to determine the functioning, the organisation, the supply of raw materials and the production of the secondary glass workshops. The second objective is to consider the economic, social and political context of each occurrence in order to understand the possible links between the artisans and the religious or secular authorities. For example, monastic communities seem to have played an important role in the establishment of glass workshops in their area. What influence did they have on the type of workshops, the supply of raw materials, and the consumption of products? We will use archaeological remains as well as written sources and archaeometric data to provide some answers. We will also examine the connections between

the glass workshops and the construction sites, including temporary structures.

This overview of secondary glass workshops, dating to the end of the first millennium CE, allows us to understand the first steps of the transition that took place in the glass industry during this period. Indeed, several clues seem to point to the invention and adoption of new recipes. Among them, the increase in recycling of earlier glass probably means that imports of raw glass from the Near East were insufficient. This phenomenon led to the emergence of new trade networks to supply the workshops in cullet. We will then ask the question of the economic significance of such restructuring and its impact on glass production.

Sylvie Balcon, Grégoire Chêne, David Strivay & Line Van Wersch

Early medieval glass in Burgundy. The Workshops of Mesvres and Autun

Two sites in Autun and Mesvres (Saône-et-Loire, Burgundy), gave the rare opportunity to examine the question of the glass production in Antiquity and Early Middle Ages. In Autun, the data studied in two locations in the upper part of the city (Ville haute) are interesting but incomplete. In Mesvres, it was possible to recognized two workshops: one of the Late Antiquity, the other of the Carolingian times. The first one was very damaged, but two glass furnaces were identified. The workshop was probably linked to the construction of a domestic house, in association with metallurgical activities. For the Carolingian times, a furnace in quite good state was analysed. It was redone several times. This furnace and surfaces of work associated with it, were probably linked to the reconstruction of the monastic church.

28 objects from the Carolingian contexts of Mesvres were analyzed by PIXE-PIGE at IPNAS (ULiège). These were vitrified pieces, tesserae, windows and vessels fragments of different colors. Among these, if, no potash glass is identified, two types of soda glass were clearly distinguished. For at least one fragment, the concentrations of the major and minor elements correspond to the values reported for plant ash glass, which is quite rare in northwestern Europe. The other colorless fragments were made with natron glass. They can be divided in two groups, one of them containing more traces of recycling. This practice also appears clearly with the colored glass. The tesserae seem to correspond to previous productions and would be present on the site to be remelted and transformed, without excluding that some were made for the decoration of a chapel built in the monastic complex

Edith Peytremann, Isabelle Commandré, Bernard Gratuze & Françoise Labaune

L'atelier de production secondaire de la Ferrière « Le Plessis Bergerte (Vendée), fin Ve-milieu VIe s

Le site du Plessis Bergeret 2, exploré sur 8000 m², a été découvert à l'occasion d'un diagnostic motivé par l'extension d'un lotissement sur la commune de La Ferrière. Il se trouve à 500 m au sud de l'église Sainte Radégonde et à 400 m au nord du château du Plessis Bergeret.

La principale occupation du site est datable de la fin du Ve et/ou de la première moitié du VIe siècle. Elle est matérialisée par un enclos quadrangulaire de 2688 m² abritant un puits à eau et des restes de constructions sur poteaux, par des restes de constructions, situés en dehors de l'enclos, et par les vestiges d'une installation de production secondaire de verre. Ces derniers correspondent à deux fosses et deux rigoles, probablement destinées à la gestion de l'eau et à l'empreinte rubéfiée d'un four. Ce sont principalement les éléments contenus dans les remblais des structures, après leur abandon, qui ont permis d'identifier une production verrière. Céramiques ayant servi de creusets, fils, gouttes, scories et tessons de verre, mors de canne et matériaux de construction comportant des vitrifications sont les principaux restes de cette production probablement modeste. Divers éléments conduisent, en effet, à interpréter cette installation comme un petit atelier éphémère destiné à répondre à une commande ponctuelle.

Inès Pactat, Céline Aunay & Gwenaël Roy

Blowing along the river: early medieval glass workshops in the Loire Valley (France)

A secondary glass workshop, dated to the 5th century CE, was recently discovered by the Loire at La Chaussée Saint-Victor, near Blois (France). The furnace was established in an abandoned ancient building, but the remains of the walls do not testify to the reuse of Roman materials, such as tegulae or bricks. The chemical composition of the glass wastes and the raw glass suggests an Egyptian primary glass production, i.e. the group Foy 2.1. The secondary glass workshop, which was probably dedicated to the production of vessel, was thus supplied with fresh pristine glass from the Near East. The river must have played a role in the trade of raw materials and fuel, as well as probably of products.

We therefore propose an overview of the evidence of glass manufacturing in the Loire Valley dated to Late Antiquity and the Early Middle Ages. We will then discuss the location of secondary workshops during this period of technological transition, whether or not they were linked to urban centres, monasteries, rural settlements and other craft activities. The supply of raw materials (raw glass ingots or cullet) is also an important criterion to question the trade routes and the role of the river. In this case, the results of chemical analyses will be used to reconstruct the evolution of imports over time and their economic, political and technological meaning. Finally, as far as possible, we will try to identify the productions of these secondary glass workshops and discuss their role and place in the economic landscape of the region.

Camilla Bertini

Comacchio workshop and the Northern Italian glass production during the Early Medieval period

Chemical and isotopic analysis have often been used as a proxy to answer questions connected with glass production, trade, and provenance during the 1st Millennium AD, but chemical data available for the Early Medieval period are still scarce. Between the 7th and 10th centuries, glass technologies witness a great transitional period: not only plant ashes replace natron as the "new" source of alkali, but recycling and mixing of different compositions of glass (interpreted by many scholars as a sign of decline in glass circulation from the primary production areas) seems to be the majority of glass circulating at the time.

The growing corpus of compositional data available for Northern Italian glass production (Verità et al., 2002; Uboldi and Verità, 2003; Andreescu-Treadgold et al., 2006; Schibille and Freestone, 2013; Silvestri and Marcante, 2011; Neri et al., 2019; Bertini et al., 2020) allow us to finally highlight some trends in glass Northern Italian production during the natron-plant ash transition.

In this paper, the data from Comacchio workshop will be presented within the Northern Italian glass production as well as the broader Mediterranean and Levantine context in order to answer some meaningful questions:

Which compositions were circulating at the time in Comacchio?

• How theses compositions compare to the ones already known from the published literature? What production trends do emerge from this broader picture?

• Is any composition directly linked to a specific category object? If so, does it have any technological significance?

• If mixed and recycling are present, which compositions have been affected by such practices? And by what degree?

Selected data from the WINDOWGLASSMED project (https://cordis.europa.eu/project/id/895153) will also briefly presented.

Jorge De Juan Ares

Secondary and primary glass productions in Spain and Portugal in the early Middle Ages

We knew very little about glass workshops and glass production in the Iberian Peninsula but in recent years it has become one of the regions where we know best the evolution of glass production in the early Middle Ages. Although we still do not know much about the manufacturing sites. The publication of several studies on peninsular glassmaking workshops and the substantial increase in analytical data from well-dated archaeological contexts provides a good insight into the "chaîne opératoire" on glass productions and the evolution of early medieval glass technology in Spain and Portugal.

After the fall of the Roman Empire Iberian secondary workshops continued to import Egyptian and Levantine natron glass. The workshops were mainly located in the city centres. The evidence suggests that the trade of raw materials over long distances, the production and the regional distribution of products was under control of the urban elites. Throughout the seventh century there was a progressive trend to recycling but glass imports continue even after the conquest of Palestine and Egypt by the Arab troops. Just after the Islamic conquest in the eighth and ninth centuries, manly only indirect evidence of workshops is known, thanks to the occurrence of crucibles, glass wastes and the archaeometric evidence. The end of fresh raw glass supplies forced the glassmakers to recycle old Visigothic and Roman glass and recycling became the main source to manufacture new glass objects. This stimulates the search for new local sources of glass supplies and new manufacturing technologies.

In early al-Andalus there was an interesting process of innovation and technological transfer between metallurgy, glass and ceramic that is connected with the emergence of the first known primary glass workshops on the Iberian Peninsula. In early medieval Europe high lead glass was used to make beads and jewellery but the glassmakers of al-Andalus, despite its technical difficulty, went further and did glass tableware. The production of lead glass at this time seems related to the increase of the availability of lead due to silver mining driven by the minting of dirhams. Perhaps this technological effort of doing high lead glass glassware was pushed by the political interest of the Umayyad state of Cordoba to reinforce its political influence against the Abbasid Caliphate where were located the main glass-producing centres. Interestingly this type of lead glass was used too to develop the technology of the first glazed ceramics of al-Andalus around the second half of the ninth century which imitated oriental productions.

Over time, the workability of lead glasses was improved by a better selection of raw materials and the combination with vegetable fluxes for the production mould vessels. It was also around the ninth century that the first primary workshops of soda plant ash glass emerged in al-Andalus. A transference from the Islamic East. However, from archaeology we still do not know the precise structure of any of these workshops until the later examples from the 12th century.

Mette Langboek, Olivier Vrielynck & Alicia Van Ham-Meert

A view from the other side: bead production and exchange in 6th century Europe?

What can the chemical analyses of glass beads from Merovingian graves reveal about the organisation of bead production and exchange in the sixth century? In this presentation the results of both pXRF and LA-ICP-MS studies of the complete bead assemblages from the cemeteries Lent-Lentseveld, Elst-'t Woud and Wijchen-Centrum (all located in the Netherlands) will be presented, and compared to similar analyses of beads from Campo Marchione (Italy).

Using examples of black, red and blue-green/green-blue opaque glass beads it will be demonstrated that beads with a provenance in the Eastern Mediterranean and further east were likely mass-produced and exchanged into Europe on a regular basis. The evidence for beads made in Europe is less clear: with the chemical analyses in mind several possibilities, from central production to travelling craftsmen, will be explored.

The evidence for colourless glass shows that it is mostly imported Foy 2 glass, and sometimes Roman Mn or Roman Sb-Mn decoloured glasses. The opacifying agents in the white and yellow glasses are all Sn-based highlighting that these are fresh colorants, rather than recycled tesserae.

Elisabetta Neri

Interactions between the production of copper alloys and glass in the early Middle Ages

The intervention aims to examine possible interactions between copper alloys and green and red colored glasses.

The analysis (SEM/EDS) of a series of green and red tesserae in Italy, Illyria and Asia Minor reveals the presence of copper alloy residues with a composition similar to that of objects in circulation in contemporary and previous periods.

Showing the information that can be obtained from these copper alloys residues and questioning the secondary archaeological sources on these territories, we take in consideration the workshop practices.

Gaspard Pagès & Alexandre Dissier

How did late Roman and early Medieval Glassmakers and Blacksmiths interact? A Review of some archaeological and archaeometric Evidences

Archaeologists and archaeological scientists show a growing interest in cross-craft interactions, and more particularly those involving arts of fire. This is especially the case for early Middle Ages, a period that displays many manifestations of these interactions (Loveluck et Rogers 2007; Dijkman 2013; Ashby et Sindbaek 2020), in both urban centers, monastic complexes and open-field settlements (e.g. Hedeby, Maastricht, York, Truso, Roc de Pampelune...).

We will focus specifically on interactions between secondary glass production and iron metallurgy.

These interactions may manifest themselves in several ways:

• The concomitance, on the same site, of glass and iron metallurgy workshops. The presence of these workshops in the same place can be due to several factors: exploitation of common resources, recourse to common technical skills, role played in the networks of exchange of materials...

• The use, in the glass craft, of tools produced and maintained by blacksmiths: pontils, blowing rods, chisels, pliers (Willmott et Welham 2013)...

• The use, particularly for glass coloring, of by-products of iron and steel activities, especially slag (Heck et Hoffmann 2002; Peake et Freestone 2012).

We will present an overview of the research carried out on these three forms of interaction, and discuss several aspects, particularly with regard to the archaeometric study of metallic and metallurgical materials discovered in the context of glass-making crafts.

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2022

Dr Alberto Marzo & Dr Ayache Boukaz
Cardiovascular Modelling: Basic Science to Clinical Translation
13-14 December 2022

Prof. Feng Huang, Dr Eric Robert & Dr Augusto Stancampiano
On-line Meeting on Artificial Intelligence for Plasma Science
29-30 November 2022

Dr David Crottès, Prof. Christophe Vandier & Prof. Stéphane Petoud
Ion channels in pathological context, new methods and diagnosis tools
21-23 September 2022

Prof. Rita Singh & Dr Pascale Crépieux
Gonadotropins in the Physiopathology: Current advances in the Mechanisms of Action
14-15 September 2022

Dr Duangjai Tungmunnithum, Dr Christophe Hano & Prof. Leslie Boudesocque-Delaye
NaDES for biomass valorization: new insight of a green technology
6-7 September 2022

Dr Kathia Zaleta & Prof. Patrick Vourc'h
RNA therapeutics and Neuroscience
24-25 May 2022

Dr Cynthia Gabbay, Dr Brigitte Natanson & Dr Valentina Litvan
Jewishness between Latin America and Europe: Languages in Contact, Linguistic Imaginaries and Translation
16-17 May 2022

Dr Duangjai Tungmunnithum & Dr Christophe Hano
1st Franco-Thai Seminar on Phytocosmeceutical Research and Applications
11 May 2022

Dr Franciska Vidáné Erdő, Dr Franck Bonnier & Prof. Emilie Munnier
Skin Models in Cosmetic Science: Bridging Established Methods and Novel Technologies
7-8 April 2022

2021

Dr Robert Courtois
De la séduction à l'agression ? La question du harcèlement
29-30 November 2021

Prof. Adrian Wolstenholme, Prof. Georg von Samson-Himmelstjerna & Dr Cédric Neveu
New approaches to get around roundworms
29 November - 1 December 2021

Dr Valérie Hayaert, Hélène Jagot & Christophe Regnard
Justice en scène(s)
11-12 October 2021

Dr Raphaël Cahen, Prof. Pierre Allorant & Prof. Walter Badier
Law(s) and International relations : actors, institutions and comparative legislations
15-17 September 2021

Prof. Eugeen Schreurs, Prof. Philippe Vendrix & Wendy Wauters
Music and Lived Religion in the Collegiate Church of Our Lady in Antwerp (1370 - 1566). A Multidisciplinary Study in a European context
2-4 September 2021

Dr Cristina Del Rincon Castro & Dr Elisabeth Herniou
2021 International Congress on Invertebrate Pathology and Microbial Control & 53rd Annual Meeting of the Society for Invertebrate Pathology
28 June - 2 July 2021

Dr Edurne Serrano-Larrea, Dr Conchi Ania & Dr Encarnacion Raymundo-Piñero
Challenges and opportunities in materials for green energy production and conversion
15-17 June 2021

Prof. Maxwell Hincke & Dr Sophie Réhault-Godbert
Innate immunity in a biomineralized context: trade-offs or synergies?
23-24 March 2021

Dr Rebecca Tharme & Prof. Karl Matthias Wantzen
Managing riverscapes and flow regimes for biocultural diversity
20-21 January 2021

2020

Dr Magdalena Malinowska & Dr Arnaud Lanoue
Exploring the molecular diversity of grape, a source of natural ingredients
3 December 2020

Dr Jean-François Deluchey & Prof. Nathalie Champroux
What are our lives worth to a neoliberal government?
Capitalism, War and Biopolitics in the Pandemic Era
18 - 19 November 2020

Prof. Pieter Hiemstra & Dr Mustapha Si-Tahar
Novel host- and microbiota-directed strategies for treating respiratory infections
24 - 25 September 2020

Dr Emilio Maria Sanfilippo & Xavier Rodier
FAIR Heritage: Digital Methods, Scholarly Editing and Tools for Cultural and Natural Heritage
17-18 June 2020

Dr Margriet Hoogvliet & Prof. Chiara Lastraioli
Spatial Humanities and Urban Experiences During the Long Fifteenth Century
11 Mai 2020

Dr Thimmalapura Marulappa Vishwanatha & Dr Vincent Aucagne
Challenges and prospects in chemoselectuve ligations: from protein synthesis to site-specific conjugation
27-29 January 2020

Dr Arunabh Ghosh & Prof. Fouad Ghamouss
Towards Futuristic Energy Storage; paving its way through Supercapacitors, Li-ion batteries and beyond
22-24 January 2020

2019

Dr Yuri Dancik & Dr Franck Bonnier
Skin Models in Cosmetic Science: Bridging Established Methods and Novel Technologies
2-4 December 2019

Dr Eric Robert, Dr Jean-Michel Pouvesle & Dr Catherine Grillon
International Meeting on Plasma Cosmetic Science
25-27 November 2019

Prof. Richard Freedman & Prof. Philippe Vendrix
Counterpoints: Renaissance Music and Scholarly Debate in the Digital Domain
14-16 November 2019

Prof. Manuela Simoni, Dr Frédéric Jean-Alphonse, Dr Pascale Crépieux & Dr Eric Reiter
Targeting GPCR to generate life, preserve the environment and improve animal breeding:

Dr Mauro Simonato & Dr Jérôme Rousselet
Species spread in a warmer and globalized world
18-20 October 2017

Dr Sophie Heywood & Dr Cécile Boulaire
1968 and the boundaries of childhood
12-14 October 2017

Prof. Mihai Mutascu & Prof. Camelia Turcu
Globalization and growth in eurozone: new challenges
28-29 September 2017

Dr Mauro Manno & Prof. Richard Daniellou
The role of glycosylation on serpin biology and conformational disease
27-29 September 2017

Prof. Salvatore Magazù, Prof. Francesco Piazza, Dr Sivakumar Ponnurengam Malliappan, Dr Emilie Munnier
Recent advances in basic and applied science in cosmetics
3-5 July 2017

Dr Maria Clotilde Camboni & Prof. Chiara Lastraioli
The dynamics of the relationship with the more recent past in early modern Europe: between rejection and acknowledgement
20-22 June 2017

Dr Sohail Akhter & Prof. Chantal Pichon
Messenger RNA therapeutics: advances and perspectives
22-23 March 2017

Prof. Gary Gibbons & Prof. Sergey Solodukhin
GARYFEST: Gravitation, Solitons and Symmetries
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2016

Dr Mohammed Ayoub & Dr Eric Reiter
Antibodies Targeting GPCRs, Recent Advances and Therapeutic Challenges
24-25 November 2016

Prof. David Koester, Dr Bernard Buron & Dr Jean-Philippe Fouquet
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7-9 November 2016

Dr Jorge Gutierrez & Dr Philippe Frank
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10-12 October 2016

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Being Smart In Coordination Chemistry: Medical Applications
26-28 September 2016

Dr Satyajit Phadke, Dr Chandrasekaran & Prof. Mériem Anouti
Future strategies in electrochemical technologies for efficient energy utilisation
7-9 September 2016

Prof. Peter Bennett & Prof. Philippe Vendrix
Sacred/secular intersections in early-modern European ceremonial: Text, music, image and power
11-13 July 2016

Prof. Leandros Skaltsounis & Prof. Claire Elfakir
Olive Bioactives: applications and prospects
4-6 July 2016

Dr Mikhail Zubkov & Dr Maxim Chernodub
Condensed matter physics meets relativistic quantum field theory
13-15 June 2016

Prof. Brown-Grant, Dr Carmassi, Prof. Drossbach, Prof. Hedeman, Dr Turner & Prof. Ventura
Inscribing Knowledge on the Page: Sciences, Tradition, Transmission and Subversion in the Medieval Book
6-9 June 2016

Prof. Gary Gibbons & Prof. Sergey Solodukhin
Classical and quantum black holes
30-31 May 2016

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technological and pharmacological challenges
16-18 October 2019

Prof. Akkihebbal Ravishankara & Dr Abdelwahid Mellouki
Climate, air quality, and health: long-term goals and near-term actions
28 June 2019

Dr Wolfram Kloppmann
N and P cycling in catchments: How can isotopes guide water resources management?
18 June 2019

Dr Carmen Díaz Orozco & Dr Brigitte Natanson
Forging glances.
Images and visual cultures in XIXth century Latin America
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Dr Marcelo Lorenzo & Prof. Claudio Lazzari
New avenues for the behavioral manipulation of disease vectors
21-23 May 2019

Dr Agnieszka Synowiec & Dr Christophe Hano
Biological Activities of Essential Oils
13-15 May 2019

Prof. Yiming Chen & Prof. Driss Boutat
2019 International Conference on Fractional Calculus Theory and Applications (ICFCTA 2019)
25-26 April 2019

Prof. Temenuga Trifonova & Prof. Raphaële Bertho
On the Ruins and Margins of European Identity in Cinema: European Identity in the Era of Mass Migration
2-3 April 2019

Dr Patrizia Carmassi & Prof. Jean-Patrice Boudet
Time and Science in the Liber Floridus of Lambert of Saint-Omer
27-28 March 2019

Dr Vincent Courdavault & Prof. Nathalie Guivarc'h
Refactoring Monoterpenoid Indole Alkaloid Biosynthesis in Microbial Cell Factories (MIAMi)
5-6 February 2019

Dr Denis Reis de Assis & Prof. Hélène Blasco
Induced Pluripotent Stem Cells (iPSCs): From Disease Models to Mini-Organs
28-30 January 2019

2018

Prof. Igor Lima Maldonado & Prof. Christophe Destrieux
Frontiers in Connectivity: Exploring and Dissecting the Cerebral White Matter
5-6 December 2018

Dr Marius Secula, Prof. Christine Vautrin-Ul & Dr Benoît Cagnon
Water micropollutants: from detection to removal
26-28 November 2018

Prof. Guoxian Chen & Prof. Magali Ribot
Balance laws in fluid mechanics, geophysics, biology (theory, computation, and application)
19-21 November 2018

Dr Volodymyr Sukach & Prof. Isabelle Gillaizeau
Progress in Organofluorine Chemistry
15-17 October 2018

Jens Christian Moesgaard, Prof. Marc Bompaire, Bruno Foucray & Dr Guillaume Sarah
Coins and currency in the 10th and 11th centuries: issuing authorities, political powers, economic influences
11-12 October 2018

Dr Norinne Lacerda-Queiroz & Dr Valérie Quesniaux
Malaria - Current status and challenges
27-28 September 2018

Dr Renaud Adam & Prof. Chiara Lastraioli
Lost in Renaissance
20-21 September 2018

Prof. Abdelwahid Mellouki & Dr Véronique Daële
The 6th Sino-French Joint Workshop

on Atmospheric Environment
10-12 September 2018

Prof. Emre Erdem & Dr Guylaine Poulin-Vittrant
Frontiers in Nanomaterials for Energy Harvesting and Storage
27-29 August 2018

Prof. Graeme Boone & Prof. Philippe Vendrix
Affective horizons of 'song' in the long fifteenth century
27-28 June 2018

Prof. Bilal Haider Abbasi, Prof. Nathalie Guivarc'h & Dr Christophe Hano
Modern aspects of Plant in Vitro Technology
27 June 2018

Prof. Marek Łos & Dr Catherine Grillon
Stem cells & cancer stem cells: Regenerative medicine and cancer
11-13 June 2018

Dr Ewa Łukaszyk & Prof. Marie-Luce Demonet
Transcultural Mediterranean: in search of non-orthodox and non-hegemonic universalism(s)
30-31 May 2018

Prof. Vladimir Shishov & Dr Philippe Rozenberg
Wood formation and tree adaptation to climate
23-25 May 2018

Dr Ján Žabka & Dr Christelle Briois
Advances in Space Mass Spectronometry for the Search of Extraterrestrial Signs of Life
16-18 May 2018

Dr Massimiliano Traversino Di Cristo & Prof. Paul-Alexis Mellet
From Wittenberg to Rome, and Beyond
Giordano Bruno: Will, Power, and Being
Law, Philosophy, and Theology in the Early Modern Era
26-27 April 2018

Dr William Horsnell & Dr Bernhard Ryffel
Neurotransmitters: non-neuronal functions and therapeutic opportunities
26-28 March 2018

Prof. Eric Goles & Prof. Nicolas Ollinger
Discrete Models of Complex Systems
19-21 March 2018**2017**

2017

Dr Kristina Djanashvili & Dr Éva Jakab Tóth
Is Multimodal Imaging an Invention with a Future? The Input of Chemistry
11-13 December 2017

Dr Emmanuel Saridakis & Dr Marc Boudvillain
Structural biology and biophysics of RNA-protein complexes
13-15 November 2017

Prof. Franco Pierno & Prof. Chiara Lastraioli
The Runaway Word. Languages and Religious Exile in the Renaissance
7-8 November 2017

2015

Dr Gyula Tircsó & Dr Éva Jakab Tóth
Medicinal flavor of metal complexes: diagnostic and therapeutic applications
7-9 December 2015

Prof. Erminia Ardissino & Dr Elise Boillet
Lay Readings of the Bible in Early Modern Europe
24-26 November 2015

Prof. Kathleen Campbell & Dr Frances Westall
Habitats and inhabitants on the early Earth and Mars
17-18 November 2015

Prof. Marion Harris & Dr David Giron
Insects, pathogens, and plant reprogramming: from effector molecules to ecology
5-7 October 2015

Dr Arayik Hambardzumyan & Dr Sylvie Bonnamy
Bioinspired molecular assemblies as protective and delivery systems
7-9 September 2015

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Dr Peter Arensburger & Dr Yves Bigot
Analysis and Annotation of DNA Repeats and Dark Matter in Eukaryotic Genomes
8-10 July 2015

Prof. Scott Kroeker & Dr Pierre Florian
Nuclear Waste Disposal: Designing Materials For the End of Time
27-29 May 2015

Prof. Gary Gibbons & Prof. Sergey Solodukhin
Entanglement, Holography and Geometry
17 April 2015

Prof. Kari Astala & Dr Athanasios Batakis
Loire Valley Workshop on Conformal Methods in Analysis, Random Structures & Dynamics
12-16 April 2015

2014

Dr Natalia Kirichenko & Dr Alain Roques
Insect invasions in a changing world
17-19 December 2014

Dr Alejandro Martinez & Dr Philippe Rozenberg
Natural and human-assisted adaptation of forests to climatic constraints: the relevance of interdisciplinary approaches
18-19 November 2014

Dr Magnus Williamson & Prof. Xavier Bisaro
Reconstructing Lost Spaces: acoustic, spatial, ceremonial contexts
30-31 October 2014

Dr Edouard Asselin & Dr Patrick D'Hugues
Copper, a strategic metal? The present and future of resources, processing and recycling
14-15 October 2014

Dr C. Oshman & Dr G. Poulin-Vittrant
Piezoelectric micro and nano-structures and their applications
25-26 September 2014

Dr Eric Reiter
3rd International Congress on Gonadotropins & Receptors - ICGRIII
7-10 September 2014

Dr Robin Beech & Dr Cédric Neveu
NemaTours: bringing worms together
17-18 July 2014

Prof. Gary Gibbons & Prof. Sergey Solodukhin
Gravitation, Solitons & Symmetries
20-23 May 2014

Dr Charles Sennoga & Dr Ayache Bouakaz
Targeted ultrasound contrast maging and drug delivery
19-20 May 2014

Dr Igor Leontyev & Dr Louis Hennet
Heterogeneous catalysis : recent advances in preparation and characterization
31 March - 1 April 2014

2013

Prof. Chandani Lokuge & Prof. Trevor Harris
Postcolonialism now
4-5 February 2013

Dr Fabrizio Gherardi & Dr Pascal Audigane
Geochemical reactivity in CO_2 geological storage sites, advances in optimizing injectivity, assessing storage capacity and minimizing environmental impacts
25-26 February 2013

Prof. Marcos Horacio Pereira & Prof. Claudio Lazzari
Vector-borne diseases : a multidisciplinary approach
8-9 April 2013

Prof. Marc Hillmyer & Prof. Christophe Sinturel
Bottom-up approaches to Nanotechnology
29-31 May 2013

CONTACTS

Sophie Gabillet
General Secretary
+33 2 38 21 14 81
sophie.gabillet@lestudium-ias.fr

Dr Aurélien Montagu
Scientific Manager
+33 2 38 21 14 86
aurelien.montagu@lestudium-ias.fr

LE STUDIUM
Loire Valley
Institute for Advanced Studies

www.lestudium-ias.com
1, rue Dupanloup • 45000 Orléans • FR