

PROJECT ACRONYM: **C³HARME**

PROJECT TITLE: **Next generation ceramic composites for combustion harsh environments and space**

Deliverable 6.5

Visual identity kit

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1. Executive summary

The project visual identity has been defined during the first months of the project and it should help to perceive C³HARME as an innovative, modern and bold scientific project, which aims to ease the applications of advanced materials in harsh environments such as the aerospace. All the visual identity elements have been selected to convey such message (logo, color palette, font, pictures).

The visual identity has been already applied to all the promotional material developed so far: typographic (poster, brochures, folders, etc.) as well as digital (website, social media, presentation template).

Any other visual material that will be developed in the future will adhere to the identity presented here.

2. Visual identity kit

The visual identity is formed by all the visible elements of the project, such as color, shape, typography, etc. Altogether they convey a symbolic meaning that complements the written message. Such visual identity enables C³HARME to build a coherent reputation and to make a visual statement about itself. In this way, the project becomes recognizable at a glance, allowing people that get to know C³HARME on one channel to easily recognize it in other media. Indeed, a coherent use of the visual identity across all the channels reinforces the credibility of the project, transforming into a unique strong entity.

The visual identity has also a key role in strengthening the internal communication, allowing all the partners, which belong to several institutions, to identify with the project and perceive it as a whole.

To build a successful brand identity, we first defined the key messages, the target audience and the communication channel. According to them, we then selected the features we wanted to communicate through the visual identity.

2.1. Target audience selected channels and key message

AUDIENCE	Message & Language	CHANNEL
Consortium	Feel part of an innovative scientific project; smooth the communication among the partners <i>Language:</i> Highly Technical, Highly Scientific	Website (Intranet) Meetings
European Commission	Finance an innovative project that can revolutionize the aerospace industry and has an impact on several other fields. <i>Language:</i> Technical	Official documents Webpage Social media Technical events
Stakeholders and scientific community <i>*in the domain of casting processes, ceramics, advanced materials, and aerospace, as well as any other industrial sector with similar needs.</i>	Stay tuned with C ³ HARME – the project will develop an innovative material that joins design solutions from ceramic matrix composites and ultra-high temperature ceramics. The new material should resist harsh environments such as the ones faced by aero-spatial vehicles. <i>Language:</i> Technical and scientific but accessible to non-specialist from a very specific field	Website, Social Media Newsletter Publications Technical events Leaflet, poster, and banner
Science Lovers and general public	C ³ HARME is an EU-funded project that copes with the difficulties in material design for demanding fields such as the aerospace. <i>Language:</i> Plain, close to reality, accessible	Social Media, Webpage

2.2. Logo

Our logo is comprised of the project **acronym** C³HARME and a **discrete gradient** between the main colors (red and blue) that add dynamicity to the text and recall the temperature change and the propulsion phase. The project name is written with a customized font (a variant of Helvetica), in which some of the sharp angles have been smoothed and converted into round angles to suggest the idea of easiness, in contrast with the harsh environments in which C³HARME material should perform. The acronym contains a subscript (C³), quite typical of the scientific annotation, that gives an immediate technical-scientific allure to the project.

The logo has been designed in two versions to easily adjust to multiple contexts: a blue version to be used with white or light backgrounds and a negative version to be used with darker backgrounds i.e. the C³HARME dark blue.



Figure 1 The C³HARME logo

3. Promotional Material

3.1. Poster

The project poster (A1 format) will be used to introduce C³HARME to the scientific community and to other stakeholders. It will be used by all the partners during conferences or technical meetings and it has been conceived to serve as a stand-alone overview as well as a complement to other posters developed by partners regarding their specific role in the project.



BACKGROUND

Materials for aeronautical and space applications largely involve **ceramic matrix composites (CMCs)** made of carbon, C, and silicon carbide, SiC. However, C/C composites suffer from poor erosion resistance while silicon-based ceramics, SiC/SiC or C/SiC composites, may undergo strong ablation due to the formation and volatilization of silica. In recent years,

In recent years, **Ultra-High Temperature Ceramics (UHTCs)**, have shown outstanding erosion resistance at temperatures up to 2000 °C or even higher but still cannot resist to thermal shocks and damage. Therefore, there is an increasing demand for **advanced materials with temperature capability in highly corrosive environments**, to enable space vehicles to resist several launches and reentries.

APPLICATIONS

C³HARME has selected two applications to implement the new material:

1. Rockets nozzles that must survive harsh environment produced by high performance solid propellants during launch;



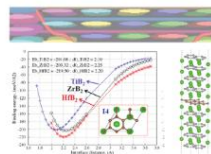
2. The Thermal Protection System TPS of hypersonic vehicles that should resist stresses during launch and re-entry.

HOW

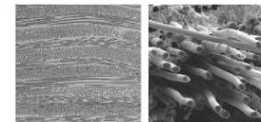
The C³HARME project will introduce innovative material solutions integrating well-established and novel techniques for CMCs and UHTCs production.

The **12 partners** represent the complete research and innovation value chain in the space sector – from initial design to manufacture and environmental testing. The iterative approach includes:

1 Design and modelling of the new materials



2 Development & characterization at lab-scale



Continuous fiber reinforced UHTC Fiber pull-out from UHTCMC

3 Manufacturing & up-scale of realistic prototypes



Ceramic nozzle prototype

4 Validation in ground simulated environment



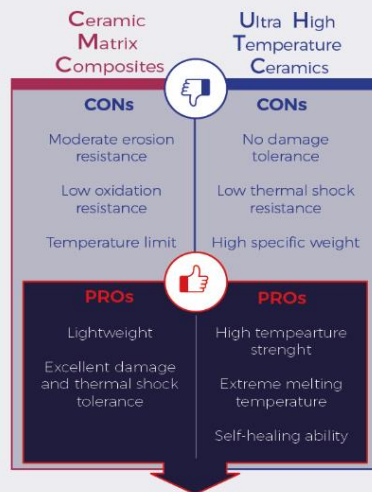
Thrust nozzle and rocket exhaust plume

CONCLUSION

UHTCMCs should resist both launch and reentry allowing a space vehicle to undergo several missions, with a notable cut in manufacturing costs. The new material might find applications in other fields with similar needs (Fusion reactors or solar power systems).

GOAL

The EU-funded project C³HARME aims to combine the best features of CMCs and UHTCs to design, develop, manufacture and test a new class of **Ultra-High Temperature Ceramic Matrix Composite (UHTCMCs) with self-healing capabilities**. The latter should arise from the in-situ formation of adherent and ultra-refractory oxide scales. The incorporation of nano-sized ceramic dopants in the material will further protect the oxide scale in severe conditions.



UHTCMCs

WWW.C3HARME.EU

PARTNERS

ISTEC-CNR
UNIVERSITY OF BIRMINGHAM
IN SRL

TECNALIA R&D
UNIVERSITY OF NAPLES
D4R
AVIO S.p.A.
NANOKER RESEARCH

HPS-PT
AIRBUS SL
AIRBUS GROUP
CRANII



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Figure 2 Project poster (miniature).

3.2. Leaflet

The leaflet (A4, two pages) is intended for general stakeholders and it has been developed as a shorter and less dense version of the poster.



Figure 3 C³HARME brochure – front and back.

3.3. Web-based material

All the digital communication should also follow a coherent style dictated by the Visual identity. In this regard, the social media and the website have been structured to include the logo, the color palette and when possible, the selected font Montserrat. The construction of the web page has already been described in Deliverable 6.7 Web Portal and Social Media.



Figure 4 Screenshot of @c3harme Twitter account.

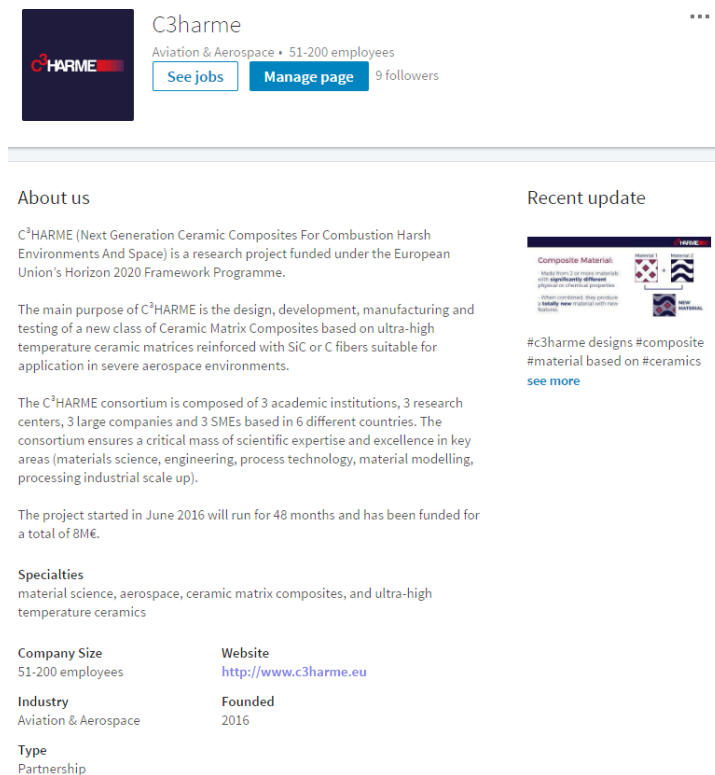


Figure 5 Screenshot of the C3HARME LinkedIn account.

4. Conclusions

The visual Identity presented here has been already successfully applied to both typographic and digital materials developed so far by the project. It will also be included, whenever possible, in all the other visual materials. All the partners are encouraged to use it whenever they communicate or disseminate the project.

Further technical details on colors, fonts, images and dissemination materials have been presented to the Consortium and approved.

For updated information on C³HARME activities and dissemination, please visit:



www.c3harme.eu



www.twitter.com/c3harme



www.linkedin.com/company/c3harme

COOPERATION BETWEEN PARTICIPANTS

- IN developed all the material
- The Coordinator revised in first instance the proposed material
- All partners revised and approved the final draft

5. Annex – Terms of use of the C³HARME project logo

The C³HARME project logo may be used to identify activities related and associated to C³HARME and developed by the C³HARME Consortium, which means organizations and individuals committed to C³HARME principles and standards.

By downloading and using the C³HARME project logo, you agree to the following:

- The C³HARME project hereby grants you the limited right to use the C³HARME project logo (the logo) solely to identify products and activities related and associated to C³HARME and developed by the C³HARME community, i.e. the organizations and individual committed to C³HARME principles and standards;
- The use of the logo is not granted exclusively to you, and the C³HARME project is free to grant such use to any other party, as it determines fit to do so;
- The logo shall never be used as a means to suggest the C³HARME project endorses your policies, products or services. Where deemed necessary, the C³HARME Project may request you to include the following clause: "*The C³HARME logo is used with the permission of the C³HARME project. However, use of the C³HARME project logo in no way constitutes an endorsement, express or implied, by the C³HARME project of this [brand/product].*" (please contact the C³HARME Coordinator in case of doubt);
- The logo shall not be used for commercial purposes nor be displayed on items designated for sale without prior and written agreement by the C³HARME Consortium;
- The logo shall not be displayed on business cards, letterheads and personal websites, without the official statement informing that it is a project funded by the European Commission;
- You shall not use the logo in any other way or sub-license the right to use or reproduce the logo to any other person, firm or corporation;
- The C³HARME project may, at its own discretion, require you to cease immediately any use of the logo.

5.1. Possible usage of the logo

The logo is owned by project C³HARME and all uses of the logo inure to the benefit of project. Any usage outside of these terms of use dilutes the effectiveness of the logo, and it is not allowed.

- The logo can be reproduced alone on the cover of publications in any form, whether in print or electronic versions, websites and other products (please consult the Project Coordinator in case of doubt).
- Website and web dissemination of the project.
- Press releases and articles related to the project.

- Presentations at project meetings, workshops and seminars, and in all dissemination actions undertaken in the framework of the project.
- Emails related to the project.
- Internal documents and reports related with the project.