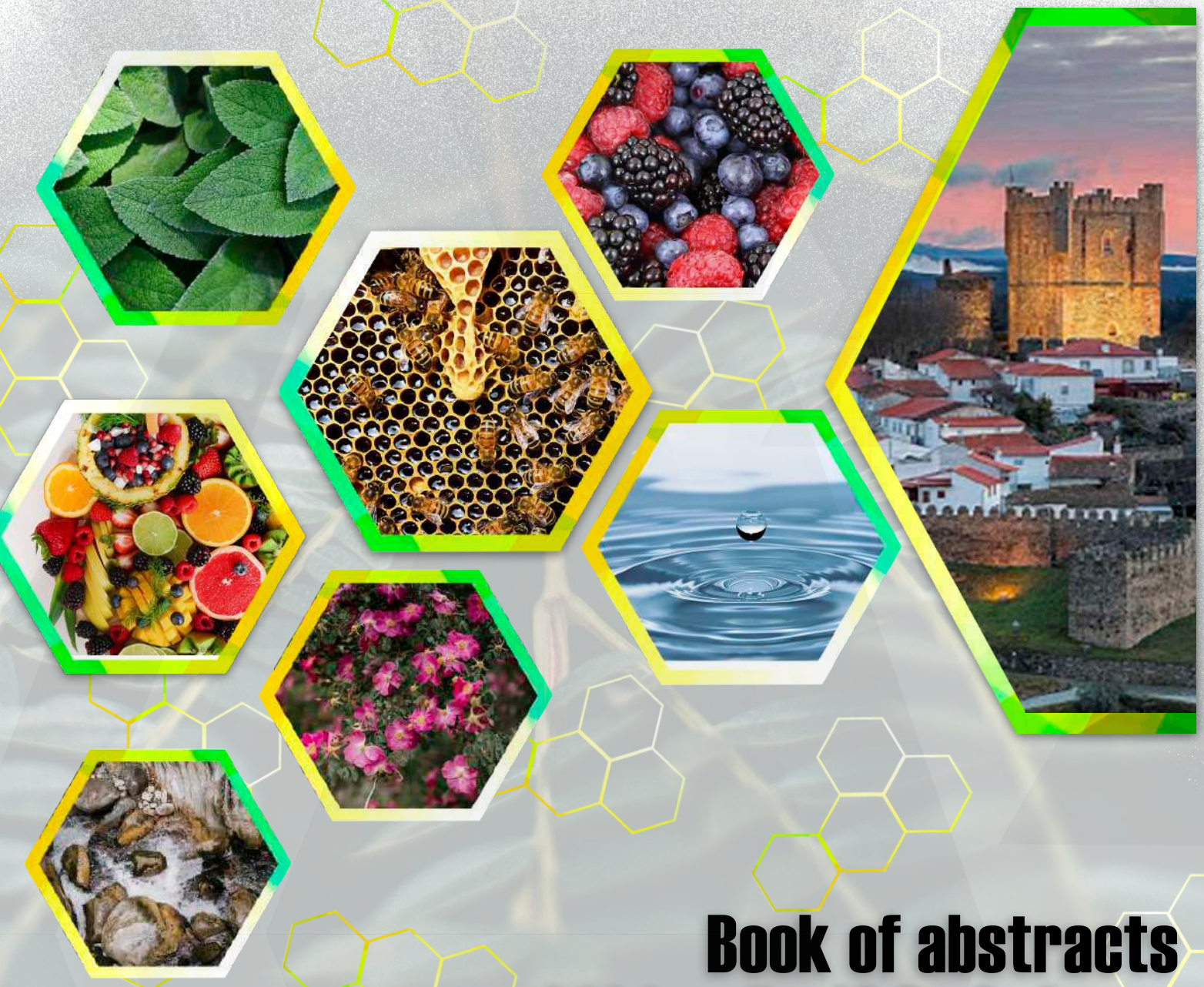
Natural products application: Health, Cosmetic and Food

Provided by nature, adapted scientifically for industry



Book of abstracts

1st International Online Conference

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CIMO Centro de Investigação de Montanha

montanhas de investigação

AQUA VALOR

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1° Online Congress on Natural products application: Health, Cosmetic and Food

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About

The Mountain Research Center is one of the 5 research centers within the Polytechnic Institute of Bragança and is an RD unit of excellence. CIMO conducts research on the Mediterranean mountain systems following an inter-disciplinary strategy that goes from Nature to Products.

In all these years, we have had the commitment of disseminating science around the world, creating solid and robust bonds and partnerships with both, academia and industry, and we are always looking for more challenging collaborations.

In this sense, the mountain research center gathers different ways to keep evolving in our main mission of science dissemination, especially now during this difficult pandemic situation, in which science dissemination has been extremely affected.

Therefore, one of our responses was the creation of the first edition of the Natural Product Applications On-line Congress, which consists in the dissemination of research using natural products applied in 3 different areas: cosmetic, food, and health.

Thanks to all of you in less than a month the congress reached more than 483 registration from universities and important companies from different parts of the world, such as Algeria, Argentina, Brazil, Colombia, France, Greece, Italy, Mexico, Netherlands, Poland, Russia, Serbia, Slovenia, Spain, Ukraine, and USA.

The NPA congress received and processed more than 211 communications, from which the scientific committee has selected the most appropriate for each type of communication, considering the limited time we have for this conference.

All the submitted works were divided into three main categories, Oral, Pitch, and Poster communications, which will join 9 Keynote lectures and one invited oral communication, to which, we would also like to thank for their availability and for accepting this invitation.

We could not thank you more for your participation, and we hope to see you next year on the second edition of the Natural Product Applications Congress.

NPA Team.

Index

About 5

Keynotes Information 8

Congress Program 12

Keynote presentation 20

Oral comunication 35

Pitch communication 59

Poster presentation 83

PCF-63

CAROTENOID-BASED SOLUTIONS FOR THE REPLACEMENT OF ARTIFICIAL COLORANTS IN PASTRY PRODUCTS

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Colour has a great importance in the first consumers' impression, allowing to infer about the overall quality, the taste, the smell, the texture, and even the safety of foodstuff [1]. For these reasons, there is a massive use of colorants in food products. Nevertheless, the most applied compounds are of artificial origin and some of them have been increasingly associated to health issues, with allergic reactions, children attention deficit, and cancer pointed out as the most common consequences [2]. These facts have been driving new research in this field, through the exploitation of natural sources of colouring molecules to be applied in detriment of artificial colorants. Among the numerous natural matrices potentially used for the extraction of colouring compounds, the fruits from the genus *Solanum* represent promising sources of pigments, namely carotenoids [3]. Together with the fact that large amounts of fresh tomato wastes (resulting from crop growing, packaging, processing, storage, and sale) are discarded worldwide, the recovery of valuable colorant biomolecules from these agri-food wastes represents a crucial step of the circular economy by re introducing them into the food chain as ingredients [3]. The need to process these bio-wastes for the recovery of coloring molecules, has led to the use of more eco-sustainable extraction methodologies in detriment of more conventional techniques, such as maceration. Ultrasound-assisted extraction methodology arises as one of the most promising alternatives, with lower extraction times, use of greener solvents, and higher recovery yields, but also with the possibility to be scaled-up to respond to the high demands of the industrialized world [3]. Carotenoid compounds are lipophilic pigments responsible for the yellow, orange, and red colours of certain plant matrices, with a vast structural diversity, but prone to isomerization and oxidation [4]. However, the colouring capacity of these molecules overcomes any instability problem (that can be solved with stabilization strategies) and, therefore, carotenoid-based colorants appear as a valid solution for application in the pastry sector, that greatly relies on yellow/orange artificial colorants.

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