



Experience Sharing



PROF. DR. MECIT HALIL OZTOP

Department of Food Engineering
Middle East Technical University (METU)

*Horizon Europe Marie Skłodowska-Curie Actions 2025 Calls Conference
08.05.2025*



ODTÜ
METU



About **OztopLab**

Dr. Oztop's research group consists of 13 doctoral candidates, 6 master's students, and 2 postdoctoral researchers actively working in the fields of food technology and food chemistry. The researchers primarily specialize in the use of NMR/MR-based techniques to develop novel, non-destructive analytical methods for food analysis. These techniques are often complemented by emerging technologies such as high hydrostatic pressure (HHP) and microwave processing. Protein extraction from different agricultural wastes has also gained significant rise following funded projects.

Food Grade Laboratory & Chemical Laboratory

Equipment:

- Homogenizers
- Freeze-dryers
- Centrifuges
- Climate chambers
- UV spectrophotometer
- Microplate spectrophotometer
- Ultrasonic Sonicators
- Magnetic stirrers
- Rotary evaporator
- Supercritical extraction

....



Horizon Europe
H2020-MSCA-RISE-2020
– Research and Innovation Staff Exchange

SuChAQuality

Sugar & Chocolate Authenticity and Quality



SuChAQuality



This project has received funding from
the European Union's Horizon 2020
research and innovation programme
under grant agreement No: 101008228



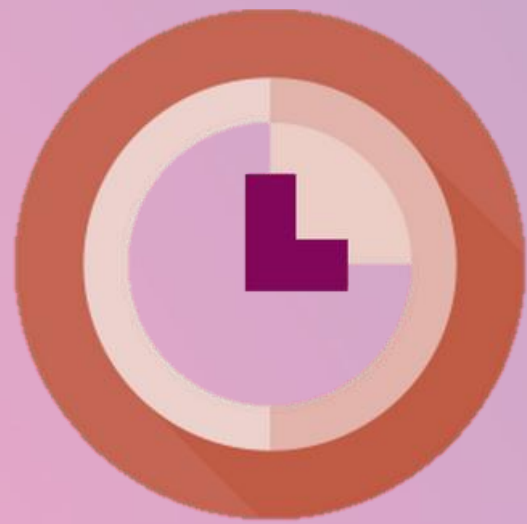
H2020-MSCA-RISE: SuChAQuality

About SuChAQuality

SuChAQuality project focuses on developing an international and cross-sectoral network of organisations able to ensure higher authenticity and quality in the confectionery industry.



SuChAQuality



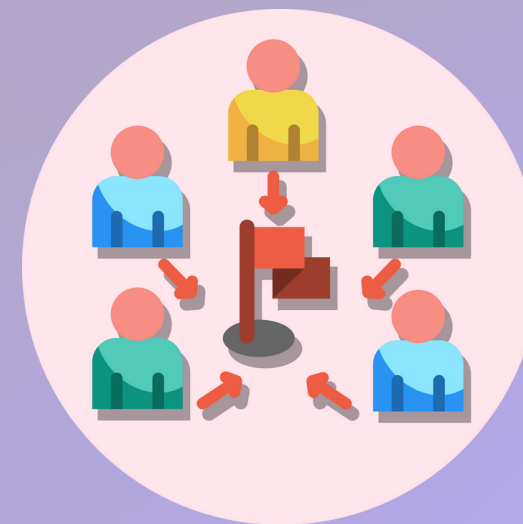
DURATION

**48 months
(01.01.2021-
31.12.2024)**



COMPOSITION

**5 industry & 7
academic
partner**



SECONDMENTS

**333 months
secondments**



BUDGET

€ 1 531 800,00

H2020-MSCA-RISE: SuChAQuality

About SuChAQuality



SuChAQuality



The project's aim is to produce advanced analytical techniques, affordable and sustainable solutions for non-academic participants, reliable and efficient quality control methods for detecting the quality of confectionery products, as well as new skills for the participating researchers.



H2020-MSCA-RISE: SuChAQuality

Partners

Coordinator



Middle East Technical
University, Turkiye

Industrial Partners



Kayseri Sugar, Turkiye



Durukan Confectionery,
Turkiye



TOREN Food Company,
Turkiye



SG Isotech
SG Isotech, Serbia



**RESONANCE
SYSTEMS**

Resonance Systems,
Germany

Academic Partners



University of Warmia and
Mazury, Poland



National University of Science
and Technology, Pakistan



Stellenbosch University, South
Africa



University of
Concepción, Chile



Nottingham Trent
University

Nottingham Trent
University, United Kingdom



SuChAQuality

H2020-MSCA-RISE: SuChAQuality

Partners

A total of **64 researchers** from **10 countries** participated in the project. The researchers conducted secondments for a total of **333 months** over a period of 4 years.



SuChAQuality



H2020-MSCA-RISE: SuChAQuality

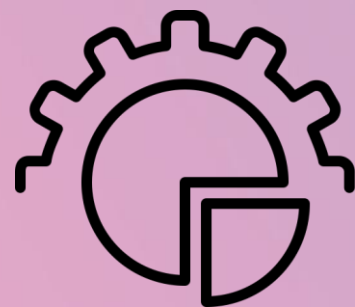
Project Management



SuChAQuality



Research collaboration through exchange of staff both **international**, **inter-sectoral** and **interdisciplinary**



Secondment duration can be from **1 month** to **12 month** for a secondee (maybe split into several stays)



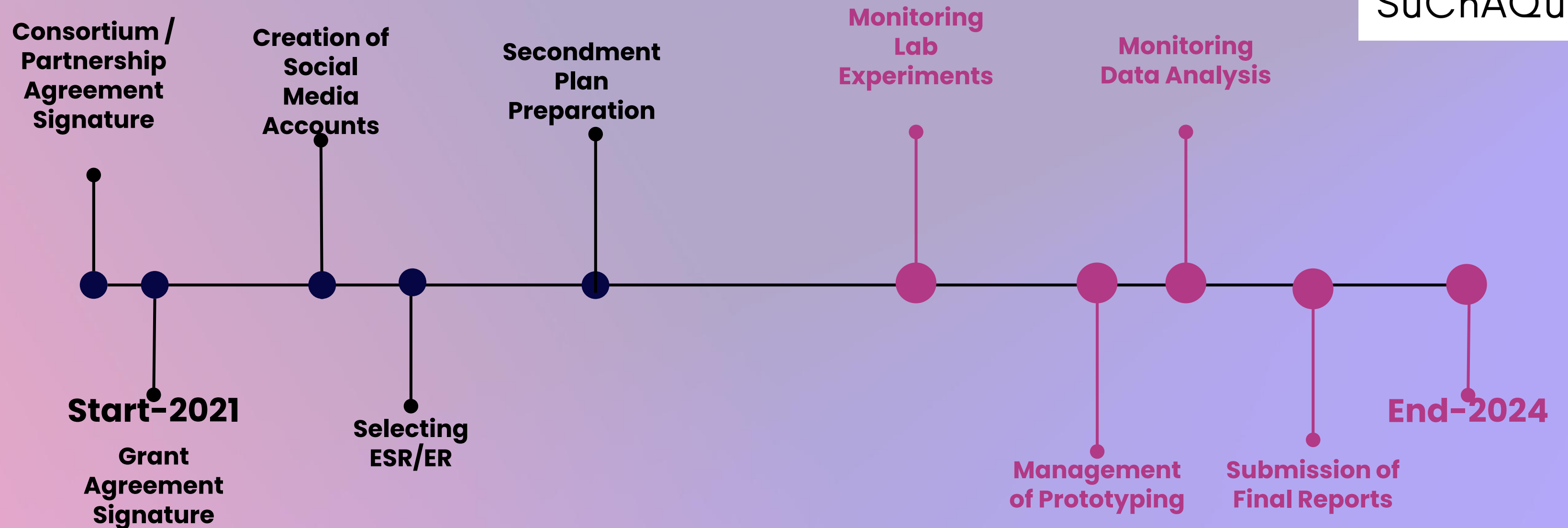
The main focus is on **exchanging secondees** rather than exclusively on scientific deliverables

H2020-MSCA-RISE: SuChAQuality

Project Management



SuChAQuality



Keeping Record
Tracking Secondment Plan

H2020-MSCA-RISE: SuChAQuality

Project Management -Secondments



SuChAQuality



Turkey and Serbia are Associated Countries

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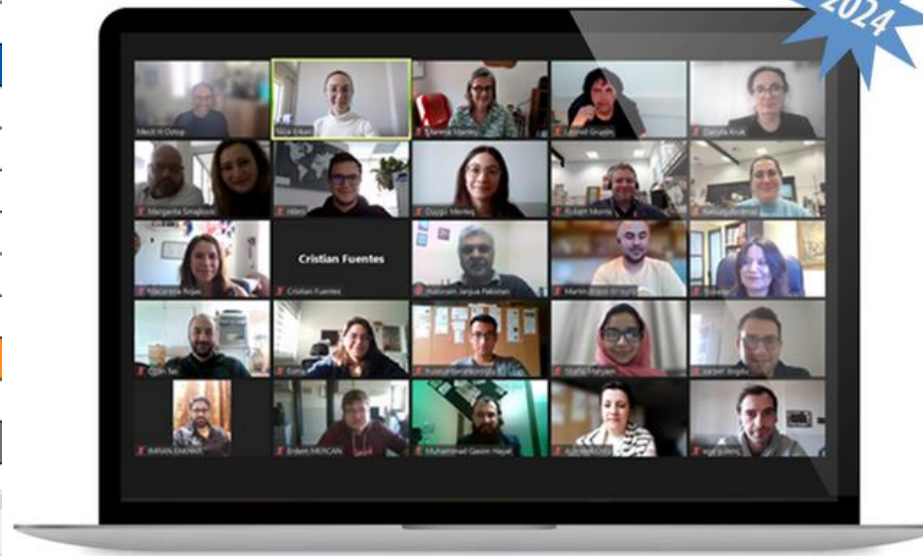
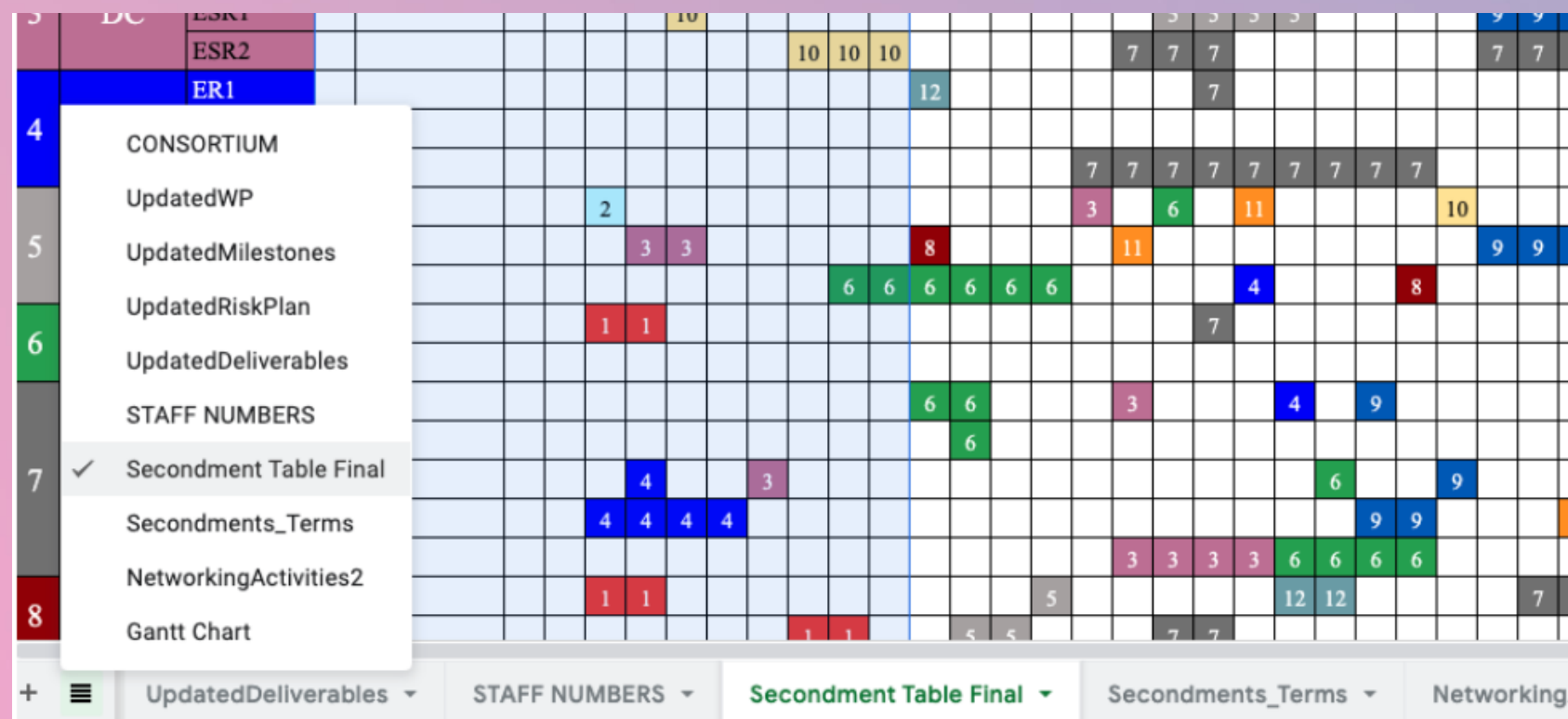
Project Management -Secondments



SuChAQuality

Google Sheets were used between partners to track the implementation of secondments.

Meetings via Zoom/Face to Face were organised for discussing updates in the plan.



WRAP-UP MEETING

We wrapped up a productive meeting, finalizing plans for secondments, key milestones, and upcoming publications. It was a great chance to align our strategy, exchange ideas, and keep things moving forward. A big thank you to our colleagues for their dedication and contributions!

H2020-MSCA-RISE: SuChAQuality

Project Management -Budget



SuChAQuality



H2020-MSCA-RISE: SuChAQuality

Project Management –Budget



SuChAQuality

Partner countries were South Africa, Pakistan and Chile.

- **Budget of Partner Countries' secondments were included in the HOSTING Beneficiary in the GRANT Agreement.**
- **The HOSTING Beneficiary completed the Financial Reporting instead of Partner countries.**
- **The Coordinator (METU) kept all the recording of secondment documents instead of South Africa, Pakistan and Chile.**
- **The beneficiaries must — for a period of five years after the payment of the balance — keep records and other supporting documentation in order to prove the proper implementation of the action.**

H2020-MSCA-RISE: SuChAQuality

Project Management –Responsibilities



SuChAQuality



The **coordinator**:

- submission of a Progress Report within 30 days after the end of each year
- organizing a Mid-term Meeting between the beneficiaries, partner organizations, entities with a capital or legal link.
- submission of any other deliverables identified in accordance with the timing and conditions set out in it.
- submission of Periodic Reporting 1 (from M1 to M24) and Periodic Reporting 2 (from M24 to M48)
- submission of Final Report at the end of the project



The **beneficiaries**:

- Submission of a 'researcher declaration' within 20 days after the secondment of each seconded staff member

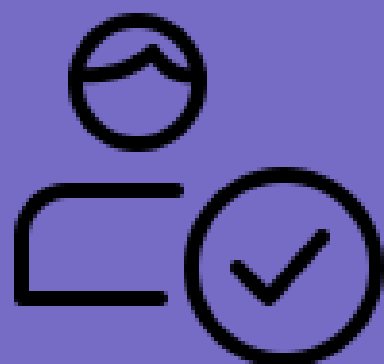
H2020-MSCA-RISE: SuChAQuality

Project Management- Record Keeping



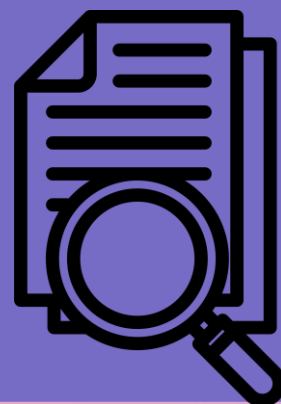
SuChAQuality

Eligibility



- i) evidence of PhD, doctorate students, and work contract of a technical staff or administrative staff.
- ii) evidence should be valid for at least 1 month before secondment & 1 month after the secondment

Mobility and Accommodation of the Secondments



- i) evidence of the travel, as tickets and boarding pass;
- ii) evidence of the accommodation as hotel reservation, B&B, contract for renting an apartment etc.

Duration of Secondment



- i) evidence of the physical presence of the fellow in the host premises such as: hosting arrangements, lab sheets, time sheets, secondment agreements etc.

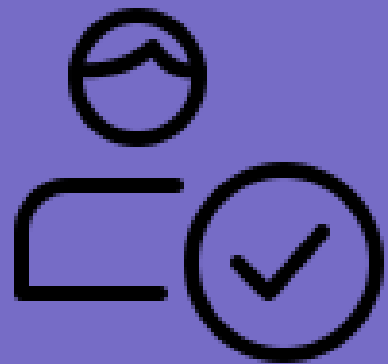
H2020-MSCA-RISE: SuChAQuality

Project Management- Record Keeping



SuChAQuality

Eligibility



- i) evidence of PhD, doctorate students, and work contract of a technical staff or administrative staff.
- ii) evidence should be valid for at least 1 month before secondment & 1 month after the secondment



PhD students from Pakistan, South Africa and Chile were able to perform secondments without being personnel of their institutions.



Master student from South Africa was able to perform secondments.

H2020-MSCA-RISE: SuChAQuality

Project Outcomes



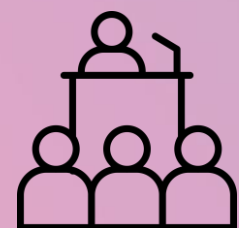
SuChAQuality



18 Deliverables were submitted



30 milestones were achieved



19 abstracts presented (oral/poster presentations) at the events below

- EUROMAR 2023, 2024 (Scotland, 2023)
- Ampere NMR School (Poland, 2022)
- Chemometrics in Analytical Chemistry (Italy, 2022)
- PANIC NMR Conference (USA, 2022)
- MRFood (Denmark, 2022)
- SensorFINT International Conference (Slovenia, 2022)
- 1st sensorFINT International Workshop (Portugal, 2022)
- Project webinars, training schools, workshops

H2020-MSCA-RISE: SuChAQuality

Key Succesies



SuChAQuality

333 secondments enabled deep intersectoral collaboration by **64 researchers** from **10 countries**

An ultraviolet–visible spectroscopy-based method was developed to **quickly and affordably** classify sucrose. This method **does not involve complex chemical analysis** and can be used in research or by industry **to detect the source of sugar.**

Creation of a **patent-pending benchtop nuclear magnetic resonance (NMR) device** for monitoring chocolate tempering in real time

TD-NMR experiments performed on candies, chocolate, sugar, gelatin, pectin, and molasses **led to new methods and several publications.**

H2020-MSCA-RISE: SuChAQuality Researchers' Experiences



**Researchers from
Pakistan visited UK**



**ESRs from Durukan
visited Poland**



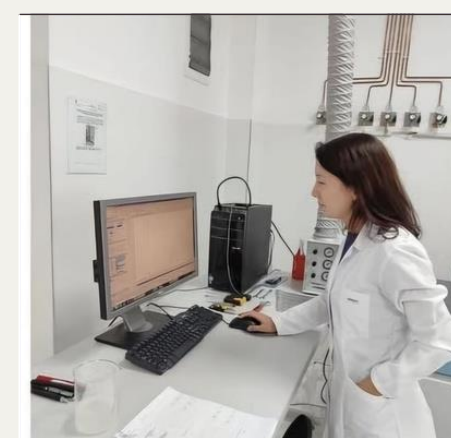
**ESRs from METU
visited Germany**



**ESR from Chile
visited METU**

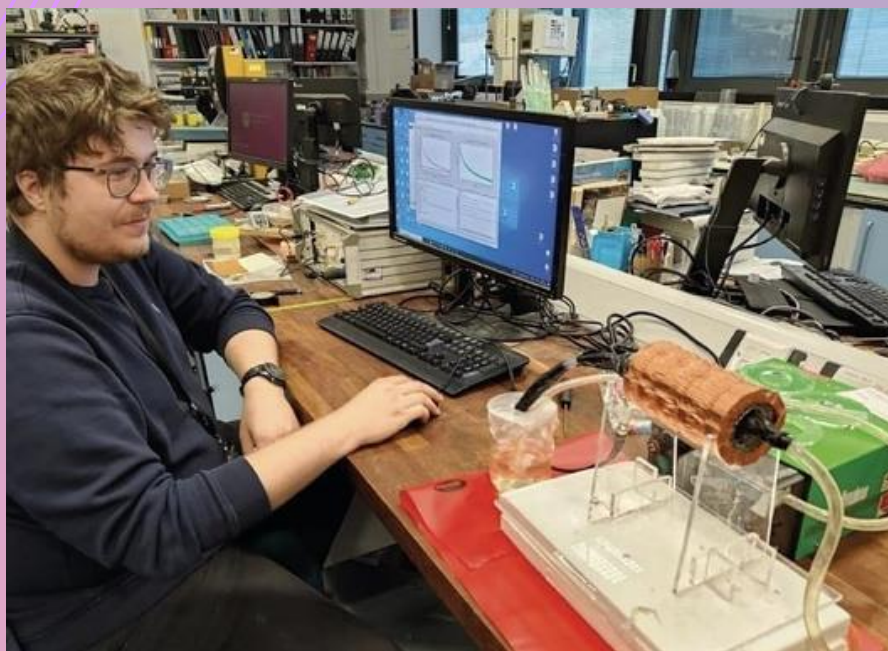


**ESR from METU
visited Chile**



**ESR from METU
visited South Africa**

H2020-MSCA-RISE: SuChAQuality Researchers' Experiences



**March-June
2022**

"In United Kingdom, I was able to learn more about MRI, TD NMR, and statistical modeling and had the opportunity to use it in my research with hydration behavior of gelatin and moisture content analysis in soft candies."

ESR of Durukan visited NTU



**March-June
2022**

"I now approach scientific problems through the eyes of a scientist and engineer. I was able to learn and work with analytical techniques that I am not familiar with and attend NMR course at METU"

ESR of SU visited METU



**July-September
2022**

"It was a privilege to be in the company of such esteemed scientists and learn from them. Algae has not yet been widely used in confectionary and I have been able to explore one such possibility in Durukan Confectionery"

ESR of NUST visited DURUKAN



**January-
March 2022**

"As well as being able to know step by step how the sugar production process occurs and thus be able to identify problems in the industry. Undoubtedly the knowledge acquired during my time in Turkey will be very useful."

ER of UDEC visited METU

H2020-MSCA-RISE: SuChAQuality CORDIS-Projects & Results

[Home](#) > ... > [H2020](#) > [Alternative Quality and Authenticity Methods for Sugar and Confectionery Industry](#)




Alternative Quality and Authenticity Methods for Sugar and Confectionery Industry

New methods for ensuring the quality of candy

A 'suite' of new analytical tools looks to help confectionery companies improve the quality of their chocolates and candies.



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With the goal of making the world just a tad sweeter, the EU-funded [SuChAQuality](#)  project is helping the sugar and confectionery industry improve its quality control.

“By developing user-friendly analytical tools, we are empowering confectionery companies to reliably assess product quality and authenticity while improving process control and efficiency,” says Mecit Halil Öztop, a researcher at [Middle East Technical University](#) , the project’s coordinating partner.

SuChAQuality’s Success Was Publisled!

Horizon Europe
HORIZON-MSCA-2022-SE

NMR-IMPROV

NMR Relaxation Tools for Improving and
Protecting Quality of Dairy Products



Funded by
the European Union



Marie
Skłodowska-Curie
Actions

HORIZON-MSCA-2022-SE: NMR-IMPROV

About NMR-IMPROV



NMR-IMPROV



The goal of NMR-IMPROV is to form an interdisciplinary and intersectoral network including physicists, chemists, mathematicians, food scientists and engineers and software and electronic engineers to develop NMR relaxation based means to gain knowledge on dynamical properties of dairy products on the molecular level.



HORIZON-MSCA-2022-SE: NMR-IMPROV

Partners

Coordinator



University of Warmia and
Mazury, Poland



NMR-IMPROV

Industrial Partners



**RESONANCE
SYSTEMS**

Resonance Systems,
Germany



STELAR

STELAR Srl, Italy



SUTAS, Turkiye

Academic Partners



**ODTÜ
METU**

Middle East Technical
University, Turkiye



Jomo Kenyatta University of
Agriculture and Technology,
Kenya



Université de Sfax
TUNISIE

Sfax University,
Tunisia



Bologna University, Italy



HSWT-Institute of Food
Technology, Germany

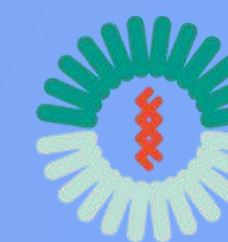


**TÉCNICO
LISBOA**

Lisbon University,
Instituto Superior
Tecnicoi, Portugal



American University of Beirut,
Lebanon



Porto Conte Ricerche Srl, Italy

HORIZON-MSCA-2022-SE: NMR-IMPROV

About NMR-IMPROV

The researchers from 8 countries aimed to implement secondments for a total of 296 months.



NMR-IMPROV



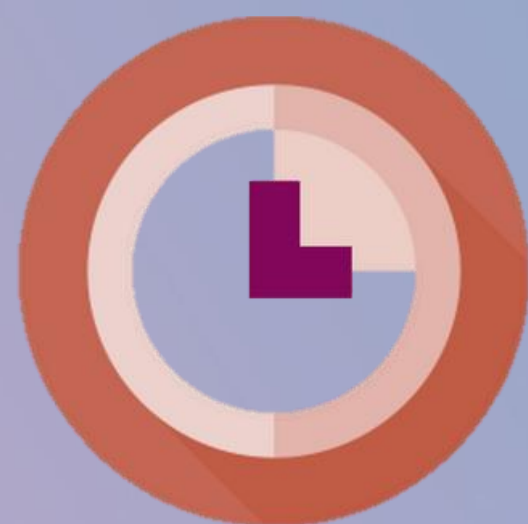
HORIZON-MSCA-2022-SE: NMR-IMPROV

About NMR-IMPROV

NMR-IMPROV project focuses on investigating properties of dairy products by exploiting Nuclear Magnetic Resonance (NMR) relaxation, including Fast Field Cycling and Time-Domain NMR methods.



NMR-IMPROV



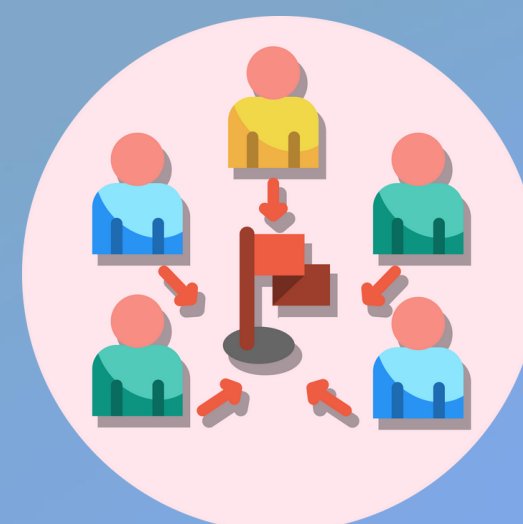
DURATION

**48 months
(01.01.2024–
31.12.2027)**



COMPOSITION

**3 industry & 9
academic
partner**



SECONDMENTS

**296 months
secondments**



BUDGET

€ 1 361 600,00

HORIZON-MSCA-2022-SE: NMR-IMPROV

About NMR-IMPROV



NMR-IMPROV

Google Sheets is used between partners to track the implementation of secondments. Updates in the secondment plans are discussed during Meetings via Zoom/Face to Face

NMR-IMPROV_First Secondment Plan

XLSX

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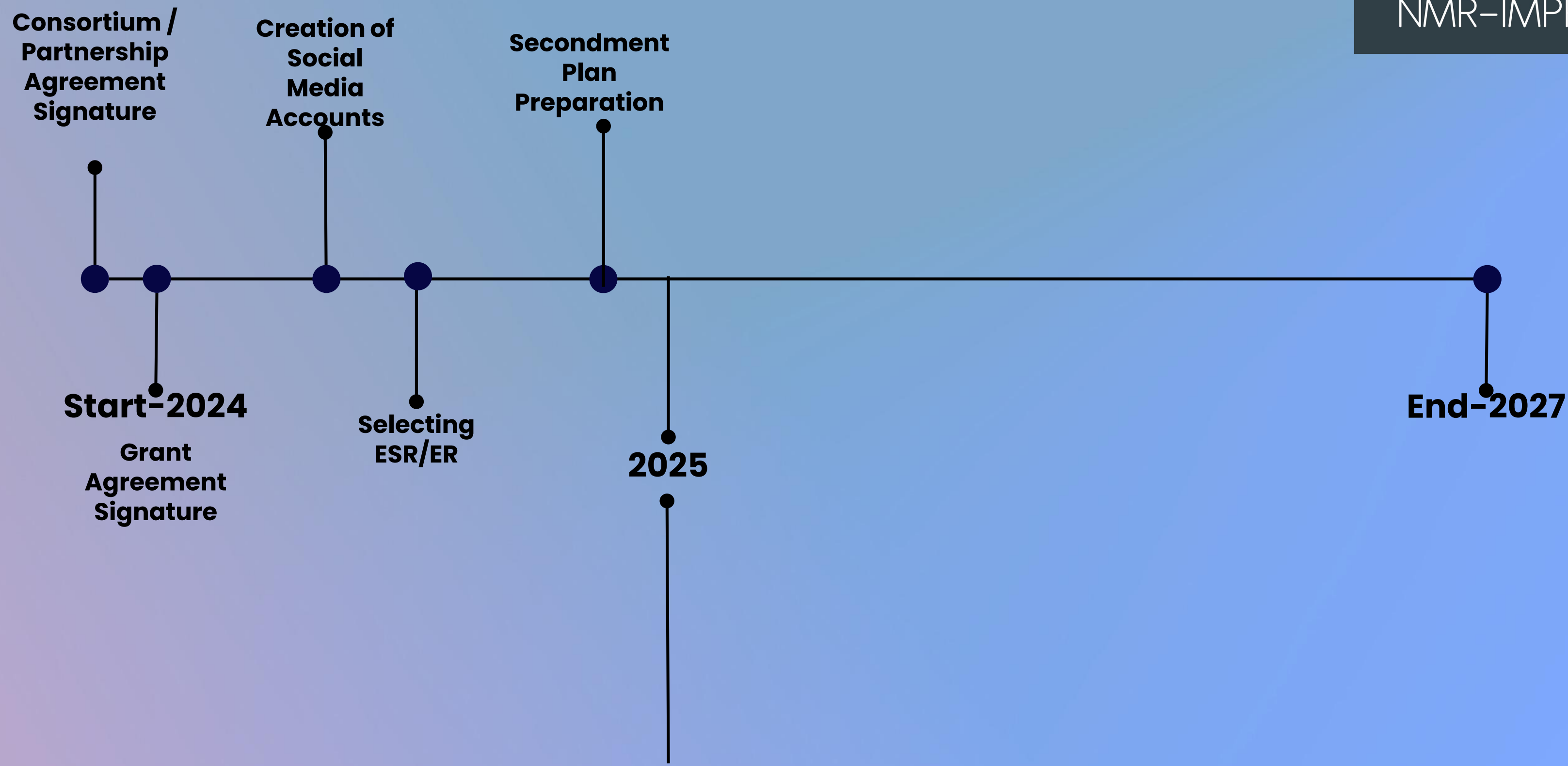


HORIZON-MSCA-2022-SE: NMR-IMPROV

About NMR-IMPROV



NMR-IMPROV



HORIZON-MSCA-2022-SE: NMR-IMPROV

About NMR-IMPROV

ESRs and ERs from METU are visiting corresponding partners for FFC-NMR and TD-NMR analysis of dairy products such as milk powders, cheeses.



NMR-IMPROV



**ESRs from METU
visited UWM (Poland)**



**ESR from METU visited
IST (Portugal)**



**ESR from METU visited
UWM (Poland)**

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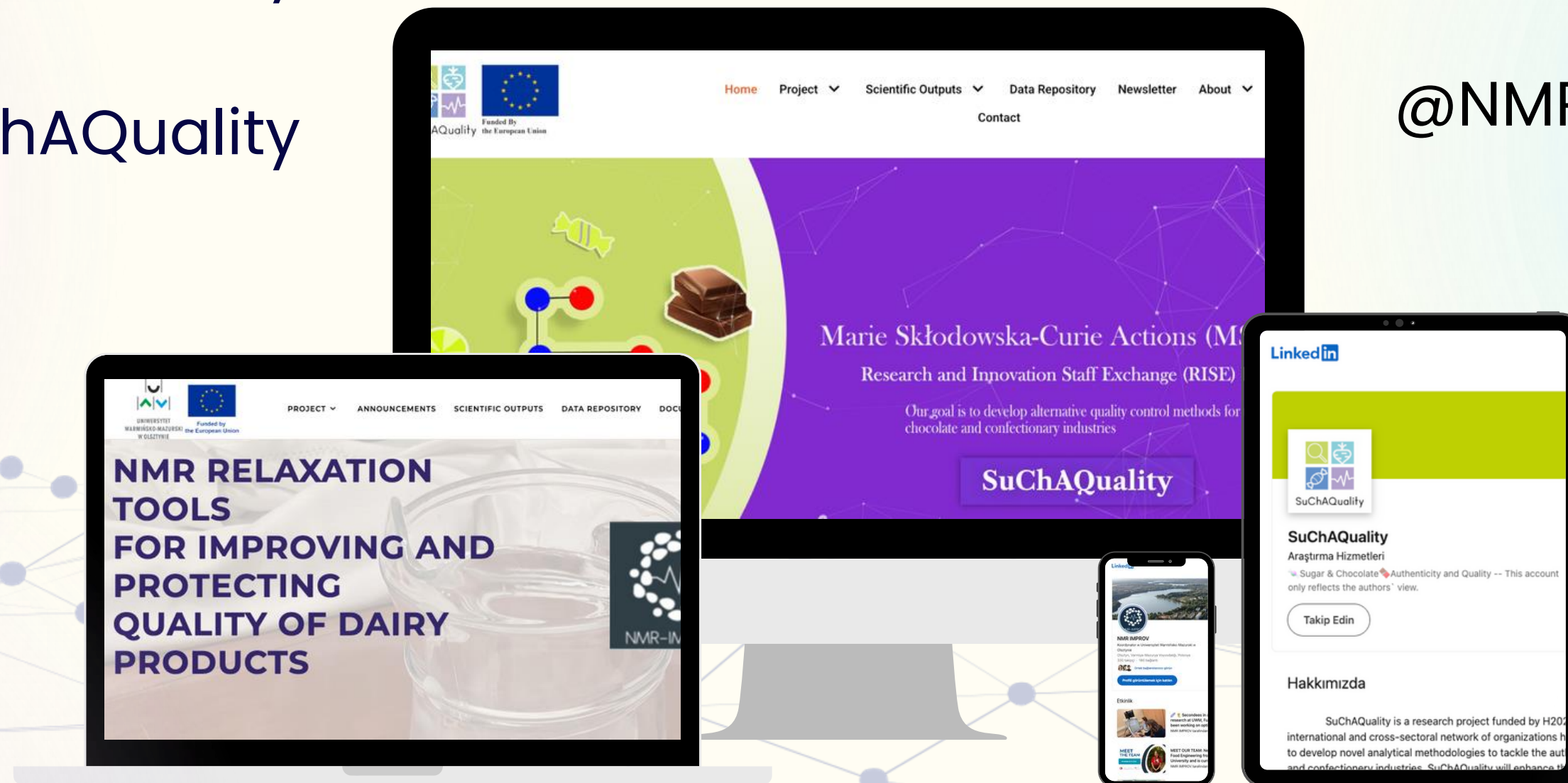
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