

Executive Summary 4th RD20 Summer School Achievements

RD20 International Summer School - 4th Edition 2026

Venue: UM6P / LIMSET — Ben Guerir, Morocco

Date: May 17 – 23, 2026

The table below presents the synthetic quantitative indicators reflecting the scale and impact of the 4th RD20 International Summer School.

Indicator	Value
Total Participants	90
Expert Speakers and Mentors	29
Number of lectures (plus high-level panel discussions)	16 (4)
Distinct Institutions (including 14 RD20 member institutions)	36
Participants' Countries Represented	15
Continents Represented	4
Speaker-to-Participant Ratio	29.6%
Internal Organizing Team (UM6P)	8 Members

With a speaker-to-participant ratio of nearly 30%, the event achieved a high-touch mentorship environment rarely seen at summer schools of this scale. This density of expertise created unique conditions for knowledge transfer, mentorship, and scientific collaboration across generations of researchers.

Five Strategic Scientific Pillars

01

Renewable Energy & Storage

Advanced focus on Battery Technology and Thermal Energy Storage (TES) for industrial decarbonization, including grid-scale applications and Power-to-X pathways.

02

Green Molecules

Exploration of Green Hydrogen and Ammonia as essential vectors for a carbon-free fertilizer chain, including production pathways and value chain analysis.

03

CCUS — Carbon Capture, Utilization & Storage

Identification of industrial solutions for hard-to-abate emission sectors, with focus on scalable capture technologies applicable to fertilizer and chemical industries.

04

Digital Innovation & AI in Materials Science

AI-driven acceleration of materials discovery and process optimization, including machine learning applications for material extraction and lifecycle analysis.

05

Systems Thinking & Just Energy Transition

Analysis of critical material supply chains, financing mechanisms, and policy frameworks to ensure equitable and sustainable energy transitions globally.

Industrial Case Studies

Researchers and participants worked collaboratively in 9 teams on three structured industrial case studies in a total of 9 scenarios, applying theoretical knowledge to real-world decarbonization challenges:

Case	Title	Focus Area
Case 1	Grid Integration & Power-to-X Pathways	Renewable Energy & Storage
Case 2	Hydrogen & Ammonia in the Value Chain: Calculating the True Climate Cost	Green Molecules
Case 3	Reducing the Carbon Footprint of Material Extraction	AI, CCUS & Systems Thinking

Expert Speakers & Institutional Hubs

The scientific program featured 29 expert speakers, representing a speaker-to-participant ratio of 29.6% — a deliberately curated density designed to maximize mentorship and direct knowledge exchange. Expert speakers originated from the following institutional hubs:

Institution	Country	Expertise Domain
UM6P / LIMSET	Morocco	Host & coordination — energy materials, process engineering
AIST	Japan	PV, grid modeling, energy systems
CNRS	France	Materials science, RD20 coordination
CEA	France	Thermal storage, green hydrogen
NLR	United States	Systems thinking, battery technology
KACARE	Saudi Arabia	Wind energy, industrial scaling
KAPSARC	Saudi Arabia	Policy, energy economics
Univ. of Strathclyde / Birmingham	United Kingdom	Engineering, sustainable energy
JRC (European Commission)	EU	Policy frameworks, CCUS
Fraunhofer ISE	Germany	Solar energy, materials
ENEA	Italy	Energy & environment research

Academic & Professional Profile of Participants

The participant cohort was meticulously curated to foster multi-generational knowledge transfer, balancing emerging researchers with established academic and industrial experts:

- ❑ **PhD & Master's Students — Dominant cohort, forming the next generation of energy leadership**
Primary audience for the school's mentorship and training objectives
- ❑ **Postdoctoral Researchers — Highly represented, forming a critical bridge between training and expertise**
- ❑ **Professors — Strong presence, primarily from France, the United Kingdom, and UM6P**
- ❑ **Scientists — Permanent staff from national laboratories (CNRS, CEA, AIST, NLR)**
- ❑ **Industrial Participants — Strategic integration of JESA Group and KACARE**
- ❑ **Government & Policy Representatives — Saudi Ministry of Energy, KAPSARC**

This multi-tiered structure empowered a sophisticated Science-Industry link, enabling participants to engage directly with both frontier research outputs and real-world industrial constraints.

Achievements report compiled by: Elmoutouakil Khadija - Hicham Lalaoui Moutarajji | Date: June 9, 2026