



OA-ICC HIGHLIGHTS

The latest news and updates from the OA-ICC and its partners

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5th International Symposium on the Ocean in a High CO₂ World

The 5th International Symposium on the Ocean in a High CO₂ World was held from 13-16 September 2022 in Lima, Peru. The event brought together over 200 scientists, academics, students, government representatives, and ocean product entrepreneurs from the OA community to share research and results on ocean acidification (OA) and approaches to mitigation. The OA-ICC teamed up with the National University of Pedro Ruiz Gallo, Peru's Institute of the Sea, and the Prince Albert II of Monaco Foundation as principal sponsors of the Symposium.

Throughout the week, the symposium discussed six themes: the changing carbonate chemistry in coastal to open ocean waters, organism responses and consequences of living in a high CO₂ world in a multi-stressor environment, ecological effects of ocean acidification and stressors in a changing ocean, insights from natural ocean acidification analogues, ocean acidification and society, and global to regional policy, actions, communication, and capacity building for ocean acidification.



The OA-ICC sponsored the participation of 18 early career scientists who were able to present their research during the Symposium. Additionally, Ashley Bantelman, Project Officer for the OA-ICC, delivered a talk during the event to provide an overview of the OA-ICC's efforts to advance OA science over the past ten years. "Turning 10 this year, the OA-ICC has been contributing to the advancement of ocean acidification science, through developing and maintaining two databases available to the scientific community, collaboratively funded capacity building opportunities for scientists, and developing standardized best practices," Ms Bantelman highlighted.



Annual meeting of the SOLAS-IMBeR Ocean Acidification Working Group and the OA-ICC expert group meeting held in Lima

The SOLAS-IMBeR Ocean Acidification (SIOA) Working Group held its annual meeting on 12 September 2022 as a side event of the 5th International Symposium on the Ocean in a High CO₂ World in Lima, Peru. The meeting was devoted to presentations and discussions about the various OA-ICC activities, led by different focal points, who delivered



presentation on recent progress, current plans, and new ideas beyond 2022 for their respective activities. New plans for 2023 and beyond were laid out during the meeting, including plans to support the UN Decade Programme: Ocean Acidification Research for Sustainability (OARS) and new capacity building activities planned for 2023 including a communication training in Costa Rica, a virtual course on performing meta-analyses using OA-ICC resources, and a basic training course on ocean acidification to be held in Liberia. Additionally, the group expressed the need to continue advertising OA-ICC resources like the [news stream](#), [bibliographic database](#) and [biological response data portal](#).

The GOA-ON Regional Hubs Coordination Workshop

The OA-ICC sponsored the GOA-ON Regional Hubs Coordination Workshop as a side event of the High CO₂ Symposium in Lima, Peru. The Workshop brought together representatives from all 9 GOA-ON regional hubs for the first time. The regional Hubs, founded by researchers in their regions, foster communities of practice for the efficient collection of comparable and geographically distributed data to



assess ocean acidification and its effects and to support adaptation tools like model forecasts. There are currently regional Hubs in the Arctic, the Mediterranean, North America, the Northeast Atlantic, Africa, South Asia, the Pacific Islands and Territories, the Western Pacific, and the Latin American and Caribbean region. The Regional Hubs came together to exchange updates, discuss activities and challenges, trainings and capacity building, plans for the future, and integration with the UN Ocean Decade Programme: Ocean Acidification Research for Sustainability (OARS). The OA-ICC also provided a training exercise on performing meta-analyses using [OA-ICC Resources](#).



Training Course on Multiple Ocean Stressors organized in Monaco

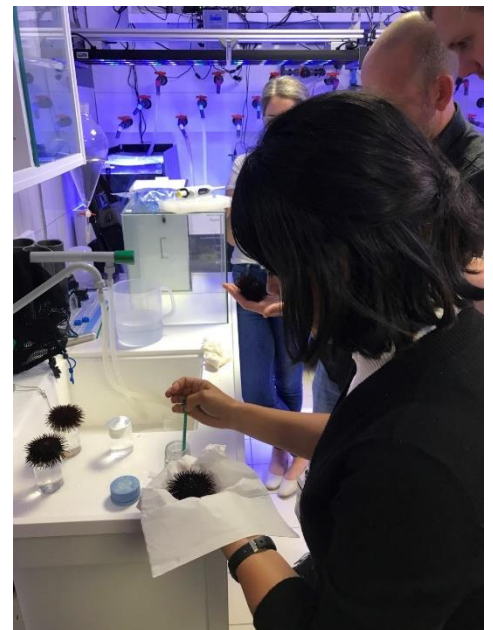


Together with the [Prince Albert II of Monaco Foundation](#), the OA-ICC organized a training course on multiple ocean stressors in Monaco from 24 October – 4 November 2022. The course was organized under the framework of the [OACIS initiative](#) and brought together 10 early-career scientists from 10 IAEA Member States (Argentina, Chile, China, Cuba, Iceland, Italy, Latvia, Peru, Portugal and Qatar) to equip them to better understand key concepts related to multi-stressors.

The course included lectures on theoretical aspects of multiple stressor research such as how to identify relevant scientific questions, best practices for seawater physico-chemistry characterization, and experimental strategies and design. Jean-Pierre Gattuso, President of the OACIS initiative, also delivered a lecture on potential ocean-based measures to mitigate and adapt to climate change

and ocean acidification. Participants were also given the opportunity to visit the IMEV laboratories in Villefranche-sur-mer for training on lab and field sampling techniques in the bay of Villefranche, and lectures on using the software R to calculate carbonate chemistry in the ocean.

The students set up a laboratory experiment at the IAEA Marine Environment Laboratories involving three stressors: ocean acidification, temperature rise, and lithium pollution. Using data from the experiment, the students will spend time after the course analyzing the impacts of these stressors on sea urchin growth.



OA-ICC Celebrates 10 Years!!

As ocean acidification research evolves and more scientific papers are published each year, there is a mounting need to synthesize and compare data so that countries can properly respond to the issue. The OA-ICC, an [IAEA Peaceful Uses Initiative](#) project launched at the UN Rio+20 conference in 2012, has been facilitating this process for 10 years now. Through the Peaceful Uses Initiative, the Centre has benefited from generous funding from several IAEA Member States, including more than 5 million USD from the United States since its inception. The OA-ICC works to raise awareness of the issue among various stakeholders and provide information on the role that nuclear and isotopic techniques can play in assessing its impacts.

For the past ten years, the OA-ICC has provided an umbrella for international coordination around the topic of ocean acidification, working with the scientific and international community and IAEA Member States to develop informed responses to this global problem. The Centre works in three areas, science, capacity building and dissemination. The OA-ICC aims to help improve the global understanding of ocean acidification and build capacity to address it.



The Centre enables students and scientists entering the field, in particular from developing countries, to get access to training to be able to set up relevant experiments, avoid typical pitfalls and ensure comparability with other studies. Since 2012, the OA-ICC and its partners have provided more than 950 capacity building opportunities to 850 scientists from more than 100 IAEA Member States.

The OA-ICC also facilitates the sharing of information on ocean acidification and makes resources available to stakeholders and policy-makers. The Centre also organizes and facilitates activities to help advance ocean acidification science with our partners around the world. Leading scientists act as focal points for various OA-ICC activities, so the project benefits from input from several of the most prominent experts in ocean acidification research.

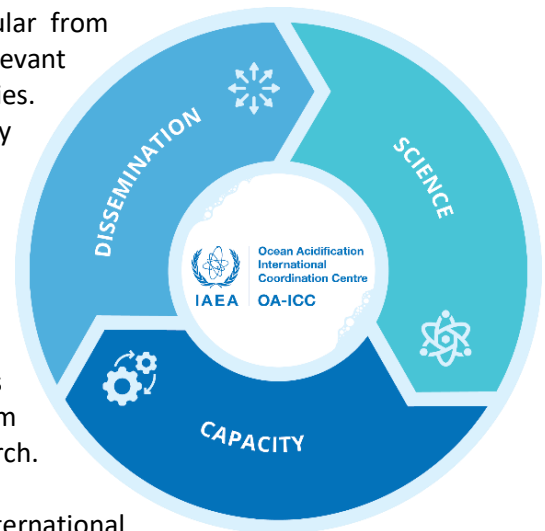
In honor of the OA-ICC's 10-year anniversary, the United States Mission to International Organizations in Vienna released a [video](#) highlighting this important milestone.

OA-ICC at COP27

COP27 took place this year in Sharm El-Sheikh, Egypt from 6-18 November. During the Conference, the OA-ICC, together with [Ocean Acidification Africa \(OA-Africa\)](#), hosted a side event entitled "[Ocean Acidification Adaptation and Resilience in Africa](#)" at the IAEA #Atoms4Climate pavilion. The side event focused on the need for cooperation and support in Africa in the realm of OA, including through the use of nuclear and isotopic techniques, to help understand and better protect valuable marine resources including fisheries and aquaculture.



The event was moderated by Ms Jana Friedrich, Section Head of the IAEA Radioecology Laboratory in Monaco, and speakers included ocean acidification experts from the University of Gothenburg, the Universitat Autònoma de Barcelona, [GOA-ON](#), OA-Africa, and IOC-UNESCO. Ms Nayrah Shaltout, an associate professor at Egypt's Marine Environment at the National Institute of Oceanography and Fisheries and co-chair of OA-Africa and Mr Sheck Sherif, co-chair of OA-Africa and an Advisor to the Executive Director of the Environmental Protection Agency (EPA) in Liberia on marine and coastal issues, both gave their perspectives on how the international community can work together to address OA in Africa.



Mr Sherif and Ms Shaltout both also pointed out the importance of capacity building and highlighted unique features in their specific regions (West Africa and North Africa, respectively). Mr Sam Dupont, OA-ICC expert and Associate Professor and Senior Lecturer at the University of Gothenburg, highlighted the OA-ICC's work throughout Africa over the past ten years. This includes a capacity assessment that was carried out across the continent with an evaluation of the needs for ocean acidification research in more than 100 institutions and will continue to address capacity needs in the collection of ocean acidification data.

In addition to organizing the side event with OA-Africa, the OA-ICC participated in other side events organized by our partners, including on "[Ocean acidification, climate and society – mitigation and adaptation opportunities and challenges towards addressing SDG14.3](#)," organized by [Plymouth Marine Laboratory \(PML\)](#) and a UN Oceans side event on "[the power of inter-agency cooperation to scale up ocean-climate action: Case studies, challenges and opportunities](#)."

OA-ICC online resources:

- [OA-ICC news stream](#) – recent publications, media coverage, meeting announcements, jobs etc.
- [Twitter page](#) – tweets of the latest news stream posts, shared daily
- [OA-ICC website](#) – information about activities and resources for different audiences / languages
- [OA-ICC bibliographic database](#) – nearly 10,000 references with citations, abstracts, and keywords
- [OA-ICC data compilation and portal](#) – on the biological response to ocean acidification: access to experimental data from 1,340 scientific papers on a user-friendly portal

The IAEA OA-ICC promotes global collaboration and activities to advance ocean acidification science, capacity building, and communication

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