



8th GLOBAL NITROGEN CONFERENCE
3rd – 7th MAY 2020 | BERLIN, GERMANY

**Umwelt
Bundesamt**



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

Side-Event: “Time travel from Fritz Haber and Carl Bosch to future nitrogen challenges”

About 100 years ago, German chemist Fritz Haber invented artificial ammonia fixation. Together with Carl Bosch at BASF, they developed an industrial process to produce reactive nitrogen in large quantities. Since then, nitrogen as a nutrient in food production has become increasingly available for agricultural systems. The decreasing limitations of nitrogen fertilizer abundance in many parts of the world at the same time led to a rapid and continuous growth of the world population. Today, “bread from air” is available abundantly and ammonia synthesis consumes between 2-3 % of global energy demand. At the same time, nitrogen is used ineffectively and the vast losses result in many environmental problems.

With their invention, Fritz Haber and Carl Bosch decoupled the natural limitations of a biogeochemical nitrogen cycle that had so far effectively been closed. From our current standpoint, it looks as if industrial fixation unleashed a self-energizing system with a scenario of about 10 billion people in 2050 that will have to be fed. Quoting famous German poet Goethe and his Sorcerer’s Apprentice seems an appropriate way to describe this development: “The spirits I have called, I cannot drive away.”

At Harnack House, the former guest house and conference venue of the Kaiser Wilhelm Society (now Max Planck Society) in Berlin-Dahlem, we would like to reflect with you on the history of Fritz Haber and ammonia synthesis and risk a look into the future and further development of nitrogen management.

Let us get together there and follow in the footsteps of Albert Einstein, Werner Heisenberg, Fritz Haber, Otto Hahn, Lise Meitner and Max Planck, who all came to Harnack House for social gatherings and scientific colloquia.

We would like to end the evening with a reception with drinks and snacks.

Overall, the evening event will have a popular science-entertaining character to address both the conference attendees and the journalists.

The event will be filmed and transmitted via live stream to the conference hotel Scandic (at Potsdamer Platz) via the YouTube link. The reason for this is the limited number of participants in the Harnack House compared to the conference. Therefore, not all conference participants can participate in the side event. In order not to exclude anyone we offer the streaming variant.



Program, May 6th 2020

18:30 – 19:20: Part 1 - Historical lectures

Fritz Haber (1868-1934): Life, Work, and Legacy

Who was the Nobel laureate and how controversial is his research during the (pre-) war-time?

Referent: Prof. Bretislav Friedrich (*Prof. of Physics, Fritz-Haber-Institut der Max-Planck-Gesellschaft*)

The history of the Haber-Bosch process at BASF

The Age of Fertilizers: In 1913, the world's first plant for ammonia synthesis using the Haber-Bosch process goes into operation and provides the starting point for industrial fertilizer production.

Referent: Dr. Barbara Navé, BASF,

19:30 – 20:30: Part 2 – Panel discussion

Food security and planetary boundaries - quo vadis global food production?

Panel members:

1. **Dirk Messner**, President of the German Environment Agency
2. **Belay Begashaw**, Director General, SDG Center for Africa
3. **Achim Dobermann**, Chief Scientist of the International Fertilizer Association
4. **Heike Bach**, Managing Director VISTA GmbH, Service Provider Precision Farming with Satellite Data
5. **Shabtai Bittmann**, Chairman of the Expert Panel on Mitigation of agricultural Nitrogen within CLRTAP

20:30 – 21:30: Part 3:

Networking und Fingerfood