

PANEL IV

The System We Live in Is Not Earthbound

The following are summary reports of the presentations of Guo Wentao and Professor Dr. Helmut Alt, and the discussion following the panel on Nov. 26, day two of the Schiller Institute Conference, "Fulfilling the Dream of Mankind." The Panel focused on Future Technologies and Scientific Breakthroughs (Transportation, Thermonuclear Fusion, International Cooperation in Space Research).

GUO WENTAO

Current Situation of High Temperature Gas-Cooled Reactor in China

Guo Wentao is from the Paul Scherrer Institute, the largest research institute for natural and engineering sciences in Switzerland.

Guo Wentao spoke about one of the most advanced designs for nuclear power production: the high-temperature gas-cooled reactor. First developed in the 1960s by Rudolf Schulten, the reactor has numerous safety fea-

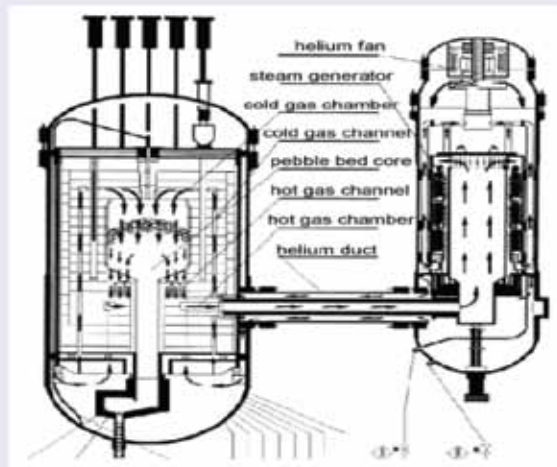
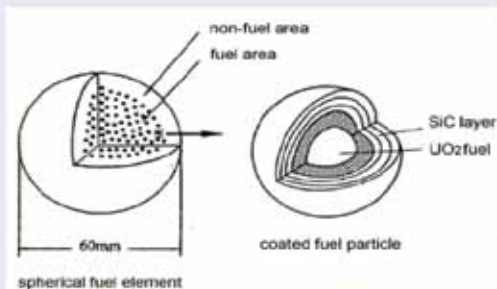


Wentao Guo

tures which make it meltdown-proof. The reactor is based on a simple design which can facilitate low-cost, speedy construction, and a very convenient form for the use of fuel. In this design, fuel "pellets," each one comprising a uranium core with a heat-resistant and distance-maintaining coating, are introduced into the reactor from the top and removed from the bottom. Once removed, the pellets are tested, and will then be either reintroduced into the top to serve as fuel again, or sent to storage. Reprocessing of the pellets is also a possibility.

China currently has one such reactor, the HTR-10 test facility in Beijing. A 1,000 MW design is currently in the final stages of construction and fuel assembly in Shidao Bay. Interest in the Chinese design has been expressed by several nations, including Saudi Arabia. Guo expressed his happiness with the portion of the conference he was able to attend, and

- High outlet temperature
- Coolant: helium
- Moderator: graphite
- Pebble fuel
- Ceramic reactor core



was glad to meet a group that supported nuclear power. He presented to the conference audience a clear idea of the highest currently available form of power, and on China's rapid commercial development of the technology.

DR. HELMUT ALT

Energy Transition—from Bad to Worse

Professor Dr. Helmut Alt is from the University of Applied Sciences (Fachhochschule), Aachen, Germany.

Professor Helmut Alt spoke about the devastating effects of the German decision to move backwards on the scale of energy, with the *Energiewende* policy of shutting down nuclear power and ramping up investment in wind and solar. He reminded the audience that in the modern world, life without electricity is simply impossible and pointed out the fact that the devastating tidal wave that struck Japan and killed tens of thousands, also caused a problem



Helmut Alt

with the Fukushima nuclear plant, but unlike the tidal wave, the problem with the nuclear plant did not result in mass deaths. Professor Alt focused on prevailing myths about energy: that nuclear power receives large subsidies (current renewable subsidies in Germany are over 20 times the peak nuclear subsidy, which was over two decades ago); that solar and wind are a useful addition to the energy supply (Germany routinely pays millions of dollars per sunny and windy day to give away excess electricity produced by these sources, which typically produce far less than is needed); and that German reductions of CO₂ could have any meaningful impact on global climate.

Dr. Alt presented, in brief, the German history of nuclear development, from Lise Meitner and Otto Hahn, to the German record of routinely having at least 8 of the top 10 nuclear plants in the world. Germany, now, has committed itself to closing all of its nuclear plants by 2022. As a result of this policy, enormous subsidies and extra costs have driven up power bills to around 300% of their year 2000 levels for both homes and for industry. After an extensive and humorous demonstration of the numerous absurd results of German energy policy, Alt concluded that these decisions, reached by the democratic process, require a significant campaign of education to resolve.

Panel IV Discussion

The first question built upon a theme introduced by Hussein Askary in Panel II, on the myth of the Chinese land grab in Africa. Dr. Alexander Demissie, who had spoken on Panel III, responded by refuting the false reporting and by laying out the positive role of Chinese involvement in improving African agriculture. This contrasts with the actual land grabs taking place in Asia—pointed out by Askary—by Europeans taking land out of food production and moving it to biofuels.

The next question concerned popular fears of nuclear “waste” as a huge cost for future generations. Professor Alt addressed the well-known technical feasibility of storing spent nuclear fuel, in such locations as salt mines. The problems have never been technically insur-

mountable, but rather have been sabotaged politically.

Further questions concerned new fields of science and technology, and the economic inferences drawn from the image of the world at night. The shortfall of electricity supply in Africa is astounding. Sub-Saharan Africa averages 45 watts per capita, with the Democratic Republic of Congo, for example, as low as 20. This is despite the DRC being the location of the planned Grand Inga Dam complex, which will produce 40,000 MW of electricity, enough for 100 million people at a medium development level. World Bank participation in this hydroelectric wonder, part of the African Union's vision for the continent in 2063, was terminated in 2016 for supposedly “environmental” reasons.