

Session 5: Chaired by Herring, Petri, Miller

High-Temperature Applications

The theme of the conference that we can do much more than produce electricity from nuclear reactors was convincing and broadly expressed: the case for nuclear heat for synthetic fuels was strongly made and the possibilities reviewed were directed toward real problems – e.g. supplying water, making synfuels, ameliorating the GHG-climate crisis.

The Session provided an exceptional opportunity for sharing of technical information between countries – especially with countries with little opportunity for such sharing. We noted extensive new interest from many countries in making H₂ using nuclear power, especially using the I/S process.

A greater appreciation is emerging of the economic and financial aspects of H₂ production. We note particularly the suggestion that the ability to switch between two possible product streams – e.g. electricity and hydrogen; heating and desalination – may improve economics.

Several papers reported on interesting new experimental results and we note momentum toward and enthusiasm for experimental demonstrations.

This is appropriate since, for example, materials issues as we go to higher temperatures with aggressive chemicals are not fully solved.

Training is seen as a key topic for spreading nuclear to new countries and new markets. For the non-electric applications, the wealth of work done in the 70s and 80s in Europe, especially in Germany, should be recaptured while this is still possible, even to the extent of involving retirees. We were made aware of how General Atomics draw on the experience of people from the earlier “hydrogen age” who are still employed. This was noted as hugely valuable to current work. However, much of the European work has no new generation of specialists to maintain knowledge of previous work.