

The 5th International Superconductivity Industry Summit

Communique

The 5th International Superconductivity Industry Summit (ISIS-5) was held at the Hotel Mount Fuji at Lake Yamanaka in Yamanashi Prefecture, Japan, from May 14 to 16, 1996. The summit was hosted by ISTECH (Japan) and supported by the private sector superconductivity groups CONECTUS (Europe) and CSAC (United States).

ISIS

The superconductivity industry has already placed many products on the market throughout the world and is likely to create new markets in many industrial fields. In 1992, leaders in the field of superconductivity from Europe, the United States, and Japan organized the first ISIS gathering in order to promote the practical application of superconductivity and to inform organizations with superconductivity-related interests of the present state and future application prospects in this area. The first ISIS meeting was held in Washington, D.C., and subsequent annual summits have been held in both Japan and Europe (ISIS-2 was held in Japan). This year's conference marks the fifth summit in this series. More than 50 delegates from France, Germany, the United Kingdom, the United States, and Japan attended the meeting, including invited officials from the Japanese government and many other observers.

The themes from ISIS-2, "Forecasting the World Superconductivity Market", and "International Cooperation" were reassessed at this year's summit. Delegates were also given the opportunity to observe an actual application of superconductivity on the final afternoon of the summit, May 16th, through a visit to the Yamanashi Maglev Test Line.

The Superconductivity Market

The prospective market for superconductivity-related components, equipment and systems was forecasted at the second summit (Hakone, Japan, 1993), and announced in a joint communique released afterwards. The results of this survey, released under the title, "Worldwide Market Forecast for Superconductivity," prospecting a market for superconductivity applications of between \$150 billion and \$200 billion by the year 2020, with approximately half of this coming from electronics-related fields. Approximately 75 corporations and experts responded in agreement to this forecast.

The survey performed at ISIS-5 was conducted in a manner similar to the previous one. The superconductivity market was divided into six sectors: electronics, electric power,

transportation, medicine, processing industries, and research opportunities. The results were then discussed and summarized as follows by delegates from Europe, the United States, and Japan.

The following are conspicuous differences between the results of the first survey and this survey.

- 1) The number of superconductivity-related products is steadily increasing.
- 2) A previously unanticipated market for superconductivity applications in the processing industry has appeared.
- 3) A market for superconductivity products is now expected to appear in developing countries during the next century.

International Cooperation

Since the first industrial summit, participants have realized that international cooperation may be necessary, in some circumstances, for the creation of commercial products utilizing superconductivity technology. Since this key technology will become extremely important in the twenty-first century, participants at past ISIS conferences have seriously debated how international cooperation should be conducted in order to achieve this goal. At the 5th Summit, delegates from Europe, the United States and Japan presented several current examples of international cooperation and seriously discussed the successful cases, the problems that have been encountered, and the possible solutions to these problems. Many views were exchanged on how to encourage greater international cooperation in the future. The following case studies were presented at the summit.

Case Study Themes:

- 1) Testing of an SMES-equipped superconducting coil (ISTEC)
- 2) ITER project (CONNECTUS)
- 3) US policy (CSAC)

(1) Avoiding the duplication of financial and personnel resources and (2) complementary relationships that combine the strengths of both parties were identified as important factors for the success of international cooperation. (1) Lack of information and (2) differences in legal and funding schemes were two issues found to often hinder cooperation. (1) Promoting the exchange of information, (2) establishing a consensus on legal and financial issues, and (3) encouraging international standardization were discussed as three ways in which these problems could be overcome.

Importance of Active Government Participation and Support

Agreement that superconductivity technology is likely to become a key technology in the twenty-first century is unanimous. Although practical applications of this technology have appeared, several unsolved problems must be clarified before more commercial products

will begin to appear in force. Industries and governments must therefore forge closer links with both universities and national research institutes in order to encourage the expansion of research activities in the superconductivity field. Delegates of ISIS-5 from around the world are eager for governments to continue their support of the private sector so that the development of products utilizing superconductivity technology may be continued.

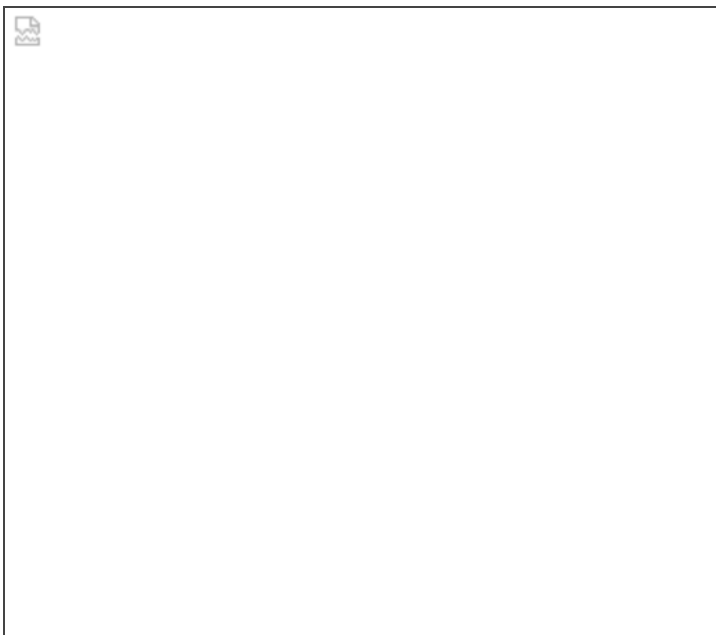
Conclusions of ISIS-5

- 1) The results of the superconductivity market survey indicate that practical applications of this technology are steadily becoming a reality in several areas.
People in the superconductivity field are aware of the unlimited potential of
- 2) international cooperation, but positive actions to improve methods and policies in this area are required for this potential to be realized.
Participants from Europe, the United States, and Japan engaged in superconductivity research and development or working to achieve the commercialization of
- 3) superconductivity products were reminded that events such as ISIS are essential in that they provide participants with the opportunity to gather in one place, exchange information, share different views, and offer new proposals.

On May 16th, the ISIS steering committee decided that ISIS-6 will be sponsored by CONECTUS and held in Europe during 1997.

ATTACHMENT: Forecast of Superconductivity Sales Opportunities

Fig. 1 Superconductivity Sales Opportunities (unit: Bil.US\$)



*This forecast includes the expected expansion of sales by 100% into outside U.S., EU & JP, as predicted by the World Bank.



Table 1. Forecast of Sales Opportunities in Respective Regions

(Billion U.S.\$)

	1995	2000	2010	2020
United States (CSAC)		4.6	18	62
Europe (CONECTUS)		1	3	18
Japan (ISTEC)		2	16	42
TOTAL	*1.7	7.6	37	122

*This figure only represents the commercial sale of MRI and other magnets.

“The total future market estimates for products and systems based on superconductivity depend critically on achieving a number of technological targets and successful industrial demonstrations, particularly in the field of high-temperature superconductivity.

Moreover, it is also necessary that the industries which are targeted as large potential users of superconducting products welcome the opportunities offered by superconducting technology and actively support programs, for introducing superconducting equipment when it is shown to meet all the required operational requirements.”