

History and Overview of Cryogenics

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Cryogenics is a vast field supporting activities in air separation and industrial gas production, liquefied natural gas, medicine, basic scientific research, space exploration, hydrogen fuels and quantum computing. This talk defines cryogenics, gives a brief history of its development and surveys its applications. Examples are drawn from accelerator facilities, space missions, MRI machines, air separation plants and fusion research systems among others. System sizes range from the very small to the very large with operating temperatures between 10 mK to 120 K.

About the Speaker:

John Weisend is a Senior Accelerator Engineer and Group Leader at the European Spallation Source specializing in large scale cryogenics and He II. He is the Chair of the Cryogenic Society of America and the International Cryogenic Engineering Conference Board. He is Editor-in-Chief of the journal *Interactions*. His books include: *Superfluid, He is for Helium*, *The Handbook of Cryogenic Engineering* (ed), *Cryostat Design* (ed), and *Cryogenic Safety* (with T. Peterson).