

## 2020 Paul R. Jones Outstanding Paper Award

### Bill Streifer



The winner of the 2020 Paul R. Jones Outstanding Paper Award is Bill Streifer.

The winning paper, “Dr. Fritz J. Hansgirg and Heavy Water Production: The Untold Story,” appeared in the *Bulletin for the History of Chemistry* in 2020, 45(2), pp. 101-119.

Bill Streifer is an independent researcher currently residing in Florida. Best known for his historical research on pre-WWII “North” Korea, Streifer serves on the Editorial Board of the *Journal of Oriental Studies* (Russian Academy of Sciences, Moscow), and is currently writing a book, “Reporting from Havana,” with Michael Ravnitzky, a Maryland-based editor, researcher and writer.

Streifer was educated in New York with a B.A. in Philosophy from New York University (1976) and an MBA in Marketing from St. John’s University (1988). Also in 1988, he was inducted into Beta Gamma Sigma, the exclusive honor society of business.

Many of Bill Streifer’s published articles, for the *American Intelligence Journal* and elsewhere, concern North Korea, including “The Flight of the ‘Hog Wild,’” about a U.S. B-29 bomber that was shot down by Soviet fighters over what is now North Korea. He has also published a series of articles with Irek Sabitov, a Russian

journalist, on the operations of the Office of Strategic Services (OSS), the predecessor of the CIA, in Manchuria and North Korea.

The winning article included figures chosen for the cover of the *Bulletin*.

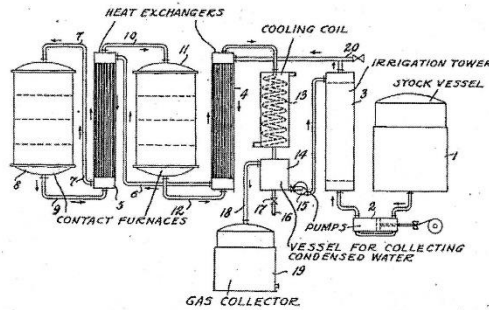
Patented Oct. 25, 1938

2,134,249

UNITED STATES PATENT OFFICE

2,134,249  
 PRODUCTION OF WATER ENRICHED WITH  
 HEAVY WATER  
 Fritz Hansgirk, Konan, Korea

**PATENT SPECIFICATION**  
 Convention Date (Austria): Dec. 6, 1934. **462,191**  
 Application Date (in United Kingdom): Nov. 4, 1935. No. 30500/35.  
 Complete Specification Accepted: March 4, 1937.  
 COMPLETE SPECIFICATION  
**Improvements in or relating to a Process for the Production of Water Enriched with Heavy Water**



DEUTSCHES REICH



AUSGEBEN AM  
 28. APRIL 1939

REICHSPATENTAMT  
**PATENTSCHRIFT**  
 № 674965  
 KLASSE 121 GRUPPE 102  
 H 243050 179121

Dr. Fritz Hansgirk in Dairen, Chosen  
 Verfahren zur Herstellung von schwerem Wasser

Patentiert im Deutschen Reich vom 12. März 1935 ab  
 Tag der Bekanntmachung über die Erteilung des Patents: 6. April 1939  
 Die Priorität der Anmeldung in Österreich vom 6. Dezember 1934 ist in Anspruch genommen

生成化「デウテリウム」ニ富メル水ヲ  
 酸スル方法

東京市麹町區丸の内三丁目一番地  
 代理人 藤野 隆士 中 松 隆  
 外一名

朝鮮咸鏡南道咸州郡興密邑湖南里一番地  
 出願人 發明者 フリツ、ハンスギル  
 國籍 埃利國

昭和十四年四月十四日  
 特許出願公告第七三三號  
 第四百四十四類 八、無機化合物雜

Heavy Water Patents, 1930s

Dr. Fritz J. Hansgirk (1891-1949) was an Austrian-born chemical engineer, most well-known for his method of magnesium production. He also held patents in many countries for his heavy water production process known as catalytic exchange and electrolysis. Bill Streifer has extensively researched the history of Hansgirk's industrial career.

Hansgirg invented his magnesium process in 1919 and tried unsuccessfully to cash in on his invention. In 1934 he went to Japan and supervised the construction of a magnesium plant in Japanese-occupied Konan, Korea, now Hungnam, North Korea. A United States industrial firm from Pittsburgh also had an interest in the plant.

As war approached, Hansgirg traveled to California and went to work for Henry J. Kaiser, the famous American industrialist. His reward was to be arrested as a “dangerous enemy alien,” since he was Austrian, and Austria was under Nazi occupation. He continued to advise Kaiser from his jail cell. Hansgirg spent the war in several internment camps until he was paroled to teach chemistry at Black Mountain College in North Carolina.

During his spare time in Japan, he developed his heavy water extraction process. But he made sure to obtain patents in the United States, Austria, Germany and Japan. His first U.S. Patent was filed in 1935, only one year after Harold Urey had received the Nobel Prize for the discovery of deuterium. Hansgirg turned an academic curiosity into an industrial commodity.

The Hansgirg process employed many of the unit operations already in use to isolate hydrogen from water (e.g., the water-gas reaction). He then used a catalytic exchange reaction to insert more deuterium into ordinary water. The catalysts included nickel and platinum. He discovered the full range of operating conditions needed to make the process profitable and efficient.

An interesting aspect of the story is that Urey tried to patent the process as part of the Manhattan Project, but his application was rejected as Hansgirg had already obtained a US Patent! The Japanese certainly employed the Hansgirg process in their war research. The Germans also poached the Hansgirg process, in spite of the German patent shown above. An actual heavy water plant was constructed in Norway at the Norsk Hydro company site, but British commandoes sabotaged the plant. This setback was one of the factors that kept Germany from developing its own atom bomb. Eventually U.S. bombers destroyed the plant entirely.

The extensive research and articulate presentation of this story is both highly informative and carefully nuanced. Hansgirg’s untimely death in 1949 deprived the world of a brilliant chemical engineer and one of the bravest men in history.