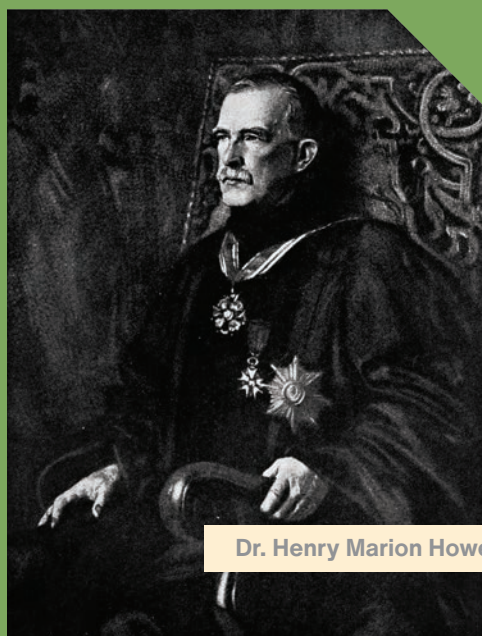


# AIST Celebrates 100 Years of the Howe Memorial Lecture

By Jennifer Vergot



Dr. Henry Marion Howe

On 19 February 1924 in New York City, N.Y., USA, metallurgist Dr. Albert Sauveur addressed the members of the American Institute of Mining and Metallurgical Engineers (AIME) for the very first Henry Marion Howe Memorial Lecture. Sauveur began his talk with a prediction: “As the years go by, names of distinguished metallurgists will be added to the list of Henry Marion Howe lecturers ... for to be chosen to deliver the Howe lecture will be, I do not hesitate to predict, a highly coveted honor.”<sup>1</sup> Nearly a century and 89 Howe lecturers later, it is safe to say that Sauveur’s words proved true. This year at AISTech 2023 — the Iron & Steel Technology Conference and Exposition in Detroit, Mich., USA, the Association for Iron & Steel Technology (AIST) will celebrate the 100th anniversary of the Howe Memorial Lecture Award, one of the most enduring and distinguished honors in the iron and steel industry.

The Howe Memorial Lecture, given biennially on odd-numbered years, serves as the plenary session for the AISTech technical program. Howe Lecturers are selected for their significant achievements as scholars, researchers and educators, and are invited to address the conference on a topic of general interest to the steel industry.

## A LEGACY OF EXCELLENCE

The Howe Memorial Lecture has brought some of the best and brightest minds in metallurgy to the conference stage to share their insights. A glance through the list of past Howe Lecturers is a veritable “who’s who” of metallurgy heavyweights. Several of their names now



grace AIST awards, such as John F. Elliott, J. Keith Brimacombe and Thomas L. Joseph, to mention a few. Past Howe Lecturers have been recognized as Distinguished Members and Fellows of AIST, named Honorary Members of AIME, elected to the National Academy of Engineering, received the Presidential Medal of Science, named to the Order of Canada, and even knighted by Queen Elizabeth II. The work of Howe Lecturers has shaped our understanding of modern metallurgy and inspired generations of steelmakers.

*“Prof. Howe converted steel science into practical application – the key for success in the iron and steel industry.”*

## HENRY MARION HOWE

But who exactly was the man behind the award? Prof. Henry Marion Howe (1848–1922) was one of the most significant American metallurgists to emerge in the late 19th century. Today he is best remembered for his landmark publications *The Metallurgy of Steel; Iron, Steel and Other Alloys*; and *The Metallography of Steel and Cast Iron*. In these books Howe gathered, organized and explained what was known about steel metallurgy at the time into an easy-to-understand format. Howe would coin many terms that are now accepted as standard in the industry, such as ferrite, cementite and pearlite microstructures.<sup>2</sup> A gifted writer and scientist, Howe’s work helped to bridge the gap between metallurgy research and mill operations. As noted by 2015 Howe Lecturer Dr. Yakov Gordon of Hatch, “Prof. Howe converted steel science into practical application — the key for success in the iron and steel industry.”

## THE LEGACY OF THE LECTURE

The year following Prof. Howe’s death in 1922, AIME established the lecture award in honor of his contributions to the steel industry. The Howe Memorial Lecture would be presented annually for the next eight decades, first by AIME and later by the Iron & Steel Society (ISS). When ISS merged with the Association of Iron & Steel Engineers to form AIST in 2004, the Howe Memorial Lecture was incorporated into the new AISTech conference and exhibition as a biennial award, trading years with the J. Keith Brimacombe lecture. Today, the Howe Memorial Lecture is one of AISTech’s signature events and typically draws hundreds of attendees.



## “A WONDERFUL AND REWARDING EXPERIENCE”

For many Howe Lecturers, being chosen for the award is both thrilling and humbling. “I truly felt very honored and a little frightened as I had to identify a lecture subject that would be of interest to a broad audience of AIST professionals,” recalls Colorado School of Mines Prof. Emeritus David Matlock, 2011 Howe Lecturer. “I reviewed the list of past Howe Award recipients and was in awe that I would now be included with many of the greats in ferrous metallurgy over the past 90 years or so.”

“When I received the invitation to give the Howe Lecture in 2009, it was a culmination of my career’s work,” said Dr. Brian G. Thomas of the Colorado School of Mines. “Having listened to previous Howe lectures over the years by my role models and greats in the field, it was humbling and a true honor to be included in the same list.”

University of New South Wales Sydney Laureate Prof. Veena Sahajwalla had the honor of being the first woman and first Australian to present the Howe Memorial Lecture in 2013. “I [was] extremely grateful for the golden opportunity to give a lecture on this major global platform...It was indeed a wonderful and rewarding experience. A lot of the people in the audience were highly interested in our work, which led to the establishment of various research and industrial collaborations.”

## A LOOK TO THE FUTURE

This year’s Howe Memorial Lecture will take place Monday, 8 May 2023, at AISTech 2023 in Detroit, Mich., USA. The 2023 Howe Lecturer will be Dr. Ronald J. O’Malley, F. Kenneth Iverson Endowed Chair of Steelmaking Technologies and director of the Kent D. Peaslee Steelmaking Manufacturing Research Center, Missouri University of Science and Technology. A past president of AIST and Distinguished Member and Fellow, O’Malley is one of the association’s most celebrated academics and educators.

For his lecture topic, O’Malley has chosen to present on an emerging technology within the steel industry: fiber optics. “In my research at Missouri S&T, I have seen strong interest from the industry on our work on fiber optic sensors for high-temperature applications. With the growing emphasis on Industry 4.0, I thought

a review of these applications for steel sensing technologies would be of interest to our industry,” he said.

“AIST has done a great job maintaining the legacy of this longstanding award. As I look back at the awardees, there are so many individuals that I hold great respect for on the list and I am humbled to now be a part of it.”

## CONCLUSION

Now moving into its next century, the Howe Memorial Lecture continues to carry forward Prof. Howe’s mission to promote the science of metallurgy for the advancement of the entire steel industry.

“The biggest value of the Howe Lecture is to educate folks about important aspects of iron and steelmaking technology outside their main interests, that they might not normally think about,” notes Brian Thomas. “Increasing your background knowledge of related fields can pay unexpected benefits...the lecture brings everyone attending the conference together to start the conference, which gives some common ground for fruitful conversations later.”

“I am very gratified that AIST has continued this excellent lecture series,” remarked David Matlock. “The fact that after a hundred years of lectures, new information on steels is still being identified is a testament to the flexibility and value of steel.”

## ACKNOWLEDGMENT

AIST wishes to thank all Howe Lecturers past and present for their contributions to this article and to the legacy of the Henry Marion Howe Lecture award. ◆

- 1 A. Sauveur, “What is Steel?”, *Transactions of the American Institute of Mining and Metallurgical Engineers*, Vol. 70, 1924.
- 2 J. Stubbles, “Who was Henry Howe?”, *Proceedings of the Annual ISS Ironmaking Conference*, 1997, p. 24.



Brian G. Thomas

# HOWE MEMORIAL LECTURERS



**Yakov M. Gordon**



**Ronald J. O'Malley**



**David K. Matlock**



**Veena Sahajwalla**

## Year | Full Name

|      |                         |
|------|-------------------------|
| 1924 | Albert Sauveur          |
| 1925 | John A. Mathews         |
| 1926 | William Campbell        |
| 1927 | Bradley Stoughton       |
| 1928 | Henry D. Hibbard        |
| 1929 | John Howe               |
| 1930 | Zay Jeffries            |
| 1931 | Francis F. Lucas        |
| 1932 | Edgar C. Bain           |
| 1933 | George B. Waterhouse    |
| 1934 | F.N. Speller            |
| 1935 | E.C. Smith              |
| 1936 | H.F. Moore              |
| 1937 | Paul D. Merica          |
| 1938 | Frederick M. Becket     |
| 1939 | H.W. Gillet             |
| 1940 | Charles H. Herty, Jr.   |
| 1941 | Alfred V. DeForest      |
| 1942 | John Johnston           |
| 1943 | L.F. Reinartz           |
| 1944 | James T. MacKenzie      |
| 1945 | Marcus A. Grossman      |
| 1946 | Thomas L. Joseph        |
| 1947 | H.W. Graham             |
| 1948 | Robert B. Sosman        |
| 1949 | John Chipman            |
| 1950 | Francis B. Foley        |
| 1951 | Joseph R. Vilella       |
| 1952 | Augustus B. Kinzel      |
| 1953 | Joseph Winlock          |
| 1954 | C.D. King               |
| 1955 | John S. Marsh           |
| 1956 | Herbert J. French       |
| 1957 | Edmund S. Davenport     |
| 1958 | Maxwell Gensamer        |
| 1959 | Clarence E. Sims        |
| 1960 | Robert F. Mehl          |
| 1961 | Lawrence S. Darken      |
| 1962 | Morris Cohen            |
| 1963 | John F. Elliott         |
| 1964 | Frederick D. Richardson |
| 1965 | B.M. Larsen             |
| 1966 | George A. Roberts       |
| 1967 | Gerhard Derge           |
| 1968 | Bernard Trentini        |

|      |                       |
|------|-----------------------|
| 1969 | Michael Tenenbaum     |
| 1970 | James B. Austin       |
| 1971 | William O. Philbrook  |
| 1972 | W.T. Lankford Jr.     |
| 1973 | F. John McMulkin      |
| 1974 | Merton Flemings       |
| 1975 | Charles R. Taylor     |
| 1976 | John H. Chesters      |
| 1977 | Terence E. Dancy      |
| 1978 | Ethem T. Turkdogan    |
| 1979 | Julian Szekely        |
| 1980 | Robert D. Pehlke      |
| 1981 | Tasuku Fuwa           |
| 1982 | William Cairns Leslie |
| 1983 | Michael Korchynsky    |
| 1984 | Frank W. Luerssen     |
| 1985 | Gordon E. Forward     |
| 1986 | J. Peter Gordon       |
| 1987 | Karl Brotzmann        |
| 1988 | Alexander McLean      |
| 1989 | Toshihiko Emi         |
| 1990 | Robert E. Boni        |
| 1991 | William E. Dennis     |
| 1992 | Geoffrey R. Belton    |
| 1993 | J. Keith Brimacombe   |
| 1994 | Paul E. Nilles        |
| 1995 | T. Ray Meadowcroft    |
| 1996 | Richard J. Fruehan    |
| 1997 | John R. Stubbles      |
| 1998 | Wei-Kao Lu            |
| 1999 | Gordon H. Geiger      |
| 2000 | Roderick I.L. Guthrie |
| 2001 | Peter J. Koros        |
| 2002 | Henri R. Gaye         |
| 2003 | George Krauss         |
| 2005 | Gordon A. Irons       |
| 2007 | Alan W. Cramb         |
| 2009 | Brian G. Thomas       |
| 2011 | David K. Matlock      |
| 2013 | Veena Sahajwalla      |
| 2015 | Yakov M. Gordon       |
| 2017 | Harry Bhadeshia       |
| 2019 | Carolyn M. Hansson    |
| 2021 | Carl De Maré          |
| 2023 | Ronald J. O'Malley    |