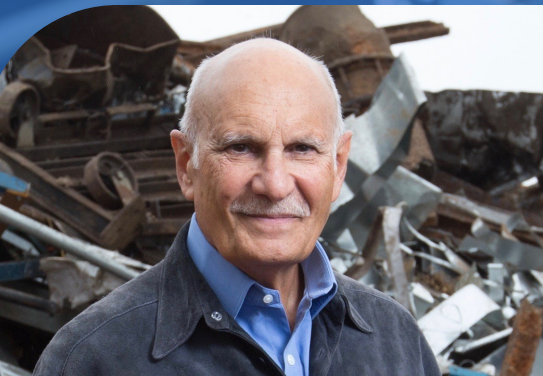


DISTINGUISHED SPEAKER SERIES

Industry 4.0 - An Emerging Era for Materials Processing

It is well accepted that the 21st Century is the century of the 4th industrial revolution (IR). Construction of railroads and the invention of the steam engine; essentially mechanical production constituted the 1st IR (1760-1850). Whereas the 2nd IR is characterized by mass production – electricity and assembly lines (1850-1950). Computer/digital revolution or the information era being the 3rd IR (1960-2000). In the 4th IR we are witnessing a world in which virtual and physical manufacturing systems globally cooperate with each other in a flexible way. We are also witnessing a complete change in the organization of global value chains. In brief, we are entering a new era of innovation that will transform materials processing. The landscape of data science and the power of machine learning applied to systems where there exist governing physical laws is pivotal in how manufacturing will be carried out in the future. The emerging areas of sensors, controls, and machine learning as they apply to materials processing will be presented. Implications and opportunities of the 4th IR will be reviewed and discussed in this presentation.

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JAN. 25 2019 | GENOMICS AUDITORIUM 1102 | 2 PM - 3 PM



Diran Apelian

Alcoa-Howmet Professor of Mechanical Engineering

Diran Apelian is the Alcoa-Howmet Professor of Engineering and Founding Director of the Metal Processing Institute (MPI) at Worcester Polytechnic Institute (WPI). He is also Distinguished Visiting Professor at the University of California, Irvine. He received his B.S. degree in metallurgical engineering from Drexel University in 1968 and his doctorate in materials science and engineering from MIT in 1972. He joined WPI in July 1990 as WPI's Provost. In 1996 he returned to the faculty and leads the activities of the Metal Processing Institute, which he founded.

Apelian is the recipient of many distinguished honors and awards – national and international; he has over 700 publications to his credit (20 patents); and serves on several technical, corporate and editorial boards. During 2008/2009, he served as President of TMS. He served as Chair of the ASM Educational Foundation Board of Trustees (2016-2018). Apelian is a Fellow of TMS, ASM, and APMI; he is a member of the National Academy of Engineering (NAE), National Academy of Inventors (NAI), and the Armenian Academy of Sciences. The 2016 Bernard Gordon Prize for Innovation in Engineering Education was awarded to WPI – and the four recipients are: Diran Apelian, Kris Wobbe, Art Heinricher and Rick Vaz.

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