**Materials Seminar**

Department of Materials Science & Engineering

# Tuesday January 30, 2018

2:15 – 3:15 ~ SERF 307

**Please join us for refreshments at 2:10**

"Materials for Advanced UltraSuperCritical Steam Turbines"

**Speaker:**

**Dr. Philip J Maziasz**  
President, High Temperature Alloys, Inc.

Abstract:

A-USC boilers and steam turbines will operate at very high temperatures of 760C for long periods of time. These systems have much higher efficiency and have lower emissions and use less coal. They require nickel based superalloys to withstand the high temperatures and steam oxidation conditions. ORNL has been doing research on new superalloys like Haynes 282 alloy and this talk will summarize the work done to select this alloy and to characterize the tensile, creep, fatigue and welding properties of this alloy. The Fossil Energy program of DOE together with EPRI and EIO are pursuing the ComTest phase of this program to put and operate test facilities at Southern Company.

Biography:

Dr. Maziasz has worked at the Oak Ridge National Laboratory in the Materials Science and Technology Division for 44 years. He has been a member of the Alloying Behavior and Design Group and has developed many new stainless steels and nickel based superalloys for high temperature applications. He received his BSE in Materials and Metallurgical Engineering from the University of Michigan in 1973 and he received his MSE in Nuclear Engineering from the University of Michigan in 1974. He received his Ph.D. in Metallurgical Engineering from the University of Tennessee in 1984. He retired from ORNL in Jan. of 2018 and currently works as President and Consultant for High Temperature Alloys. Inc. He is a Fellow of ASM-International and has won numerous awards including Inventor of the Year for 2011 at ORNL and a Battelle Distinguished Inventor in 2011. He has won 6 R&D 100 Awards and has 285 publications and over 20 patents.

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