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BS with Honors in Chemistry from Valparaiso University
Ph.D. in rare earth chemistry from University of Notre Dame
Taught at Notre Dame, University of Michigan, California State University
Professor Emeritus of Chemistry at California State University
Published two books, many peer reviewed journal articles and
12 patents in precious metal chemistry.

40 YEARS RESEARCH, BUSINESS AND CONSULTING

Recovery of Precious and Rare Earth Metals including all rare earths, Au, Pt, Pd, Rh
Engineering and design of pilot and full scale processing plants
Corrosion testing of industrial plant components in extreme environments
Recovery of base and precious metals from catalysts
Design of high temperature, high pressure pilot scale reaction vessels
Metal analysis
Precious metal and chlorine chemistry
Organometallic chemistry
Platinum group metal refining
Consultant to many major metal refiners

EXPERIENCE

35 years in industrially related research
Designed, Assembled and Tested Pilot plants for several industrial processes
Several commercial operating plants built
Past Session Chair for International Precious Metal Institute
PG Metals, CEO, 1990-1995
Pallas Metals, LLC, CEO 2004-2010
Metals Recovery Technology, Inc. CEO 1999-present
International Applied Technology, CEO, 2008-present

RARE EARTH PUBLICATIONS

1. "Synthesis and Characterization of Cyclooctatetraenyleuropium and Cyclooctatetraenylytterbium," R.G. Hayes and J.L. Thomas, J. Amer. Chem. Soc., 91, 6876 (1969).
2. "Characterization of Novel Binuclear Ytterbium Compounds by Mass Spectrometry," R.G. Hayes and J.L. Thomas, Inorg. Chem., 8, 252, 1 (1969).
3. "Mass Spectra and Bond Energies of Lanthanide Tricyclopentadienides," R.G. Hayes and J.L. Thomas, J. Organometal. Chem., 23, 487 (1970).
4. "Organometallics of the Lanthanides and Actinides," R.G. Hayes and J.L. Thomas, Organomet. Rev., 7, 1 (1971).
5. "An Electron Paramagnetic Resonance Study of Bis(cyclooctatetraenyl)F vanadium(IV) and Cyclooctatetraenyl (cyclopentadienyl)-titanium(III)," R.G. Hayes and J.L. Thomas, Inorg. Chem., 11, 348 (1972).
6. "Mass Spectra of $\text{Nd}(\text{C}_5\text{H}_5)_3$, $(\text{SmC}_5\text{H}_5)_3$, and $\text{Yb}(\text{C}_5\text{H}_5)_3$, and $\text{Yb}(\text{C}_5\text{H}_5)_2$," J.L. Thomas, Mass Spec. Bull., March, 1972.