

FORCON INTERNATIONAL

CHARLES E. SEMLER, PH.D.

EDUCATION

B.A. (1962) and M.Sc. (1965), Geology, Miami University (Ohio), Oxford, Ohio
Ph.D.(1968), Mineralogy, Ohio State University, Columbus, Ohio

CAREER HISTORY

SEMLER MATERIALS SERVICES, Refractories Consultant, Consulting services for a broad range of industries and applications, e.g. steel, non-ferrous metals, glass, cement, petrochemicals, chemicals, incinerators, and more.

THE WINTERS CO, Manager, Refractories Technology; provided a wide range of refractories consulting services to industry.

SEMLER MATERIALS SERVICES, Columbus, OH, Refractories Consultant. Assisted more than 200 companies, law firms, and government agencies worldwide with jobs, up to US\$500 million in value, involving various refractories topics.

OHIO STATE UNIVERSITY, Ceramic Engineering Department and Refractories Research Center (RRC), Columbus, OH; Professor & Director

HARBISON-WALKER REFRACTORIES CO, Garber Research Center, Pittsburgh, PA; Senior Research Mineralogist.

WASHINGTON UNIVERSITY, Dept. of Earth Science, St. Louis, MO; Assistant Prof.

MONSANTO RESEARCH CORPORATION, Dayton Lab, Dayton, OH; Sr. Res. Chem.

FERRO CORPORATION, Cleveland, OH; Research Engineer.

OTHER WORK EXPERIENCE

Visiting Fellow, University of New South Wales, Metallurgy, Sydney, Australia.

Summer Faculty Consultant, Sandia National Labs, Ceramics Group, Albuquerque, NM (Refractory Castables).

Guest Researcher, National Bureau of Standards, Ceramics Group, Gaithersburg, MD (Toughened Ceramics).

Summer Faculty Fellow, NASA, Lewis Research Center, Ceramics Branch, Cleveland, OH (SiC Composite Materials).

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PUBLICATIONS: More than 100 papers published worldwide, with others pending.

PRESENTATIONS: Over 200, throughout the U.S. and worldwide.

PATENTS: Four (4); issued in U.S. 1974, 1999, UK 1976, South Africa 1976

LEGAL EXPERIENCE: 55+ refractories cases as expert witness, including 15 depositions

SELECTED ACTIVITIES AND HONORS

- Chairman, Refractories Division, American Ceramic Society, 1984-85.
- VICE PRESIDENT - INTERNATIONAL, American Ceramic Society, 1992-93
- Chairman, Refractory Materials Committee, American Foundryman's Soc., 1976-85.
- FELLOW, American Ceramic Society, May 1980.
- CRAMER AWARD, Central Ohio Section, American Ceramic Society, Dec. 2, 1983.
- Invited Lecturer, People's Republic of China, 10/83, 11/88, 11/92, 11/96
- Invited Lecturer, Austceram - Melbourne, 8/92, Sydney, 7/94, 7/00, Cairns, 7/96
- Keynote Speaker, ALAFAR, 11/79; Tech. Assn. Refr., Japan (TARJ), Tokyo, Dec. 1993.
- International Executive Board, Unified Intl. Technical Conference on Refractories, 1989-95.
- DISTINGUISHED LIFE MEMBER, UNITECR, Aachen, Germany, Sept., 1991
- PLANJE - ST. LOUIS REFRACTORIES AWARD, Rolla, Missouri, March, 1995
- Elected to ACADEMY OF CERAMICS (Italy), 1996

SIGNIFICANT ACCOMPLISHMENTS

- Designed a novel refractory lining for a \$300 million incinerator construction project that resulted in savings of \$10,000 per day.
- Avoided closure of a \$60 million chemical plant, based on the use of a new lining design that eliminated chronic lining problems in the reactors.
- Provided lining design and practical recommendations that resulted in savings of at least \$4 million on a contract for 3 new hydrometallurgical (gold ore) autoclave circuits.
- Determined the detrimental effect(s) of steam (oxidation) on porous SiC filter tubes, that was not detected in studies at reputable UK and German labs.
- Based on inspection and analysis, determined the contributing factors and cause(s) for early refractory deterioration, runout, explosion, or other failures for linings in a wide range of industrial applications, such as steel, glass, aluminum, copper, foundries, incinerators, autoclaves, and others.
- Managed and reported 200-250 projects per year, as Director of the Refractories Research Center (RRC), Ohio State University, 1974-1986.

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- Played a key role in establishing the UNITECR Refractories Conferences (Unified International Technical Conference on Refractories), which have included '89-Anaheim, '91-Aachen, '93-Sao Paulo, '95-Kyoto, '97-New Orleans, '99-Berlin.
- Directed the R&D that led to standardization of the Ribbon and Prism Thermal Shock Tests for refractories (ASTM C-1100 and C-1171).
- Developed a new mortar that has longer service life than the mortars currently used in hydrometallurgical autoclaves, with major cost-savings.
- Received the Planje- St. Louis (Amer.Ceramic Soc.) Refractories Award in 1995.
- Provided testimony that contributed to complete vindication of a refractory contractor in a \$1 million lawsuit, involving a secondary ammonia reformer.