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Ph.D. (1990), RWTH Aachen, Germany
Thesis title: Beitrag zu den Anforderungen an Hochofenkoks, geeignet fuer den
Kohlenstaubeinblasbetrieb
(Contribution to the requirements for blast furnace coke, suitable for coal dust blowing operation)

2015-Present	Research Professor, GIFT, POSTECH
2009-2014	Team leader of Hydrogen reduction project team, POSCO
2004-2009	Group leader of ironmaking research group, POSCO
2001-2004	Team leader of Gwangyang ironmaking / coal briquette / coal research team, POSCO
1994-2000	Senior researcher, ironmaking research department, POSCO
1991-1994	Researcher, smelting reduction research team, RIST, Korea
1989-1990	Research for Ruhr Kohle A.G., Germany
1986-1988	Research for Deutsche Forschungsgemeinschaft, Germany
1986-1991	Researcher, Institute of Ironmaking, RWTH Aachen, Germany

- Hydrogen reduction of iron ore
- Pulverized coal injection to blast furnaces
- Process optimization of blast furnace ironmaking
- Technology development of new ironmaking process
- Coke making technology
- Coal utilization in ironmaking

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Utilization of carbon in steel industry

A great deal of effort has been spent in the development of economical and environment friendly steelmaking process and it's closely related with the proper use of raw material and fuel. Today's presentation is concerned with the utilization of carbon containing materials including coal, coke and natural gas in steelmaking process. In steelmaking process most of the consumption of carbon materials is for reductant generation to reduce iron ore. As a variation in the type of carbon materials has remarkable influence on steelmaking process, more detailed analysis has been made for the behavior of carbon materials in steelmaking process. Information on the characteristics of various carbon materials and their application to different steelmaking processes will be discussed. Besides the concept and research topics associated with reduction, gasification and combustion will also be contained.