Fluid catalytic cracking (FCC) unit is one of the primary boiling point reduction units in the refinery that converts longer chain crude oil to useful products such as distillate, gasoline and LPG. FCC currently produces the majority of the world’s gasoline as well as a significant portion of olefins for the chemical industry. The demands on the FCC unit are becoming more severe as global oil demand is projected to increase, crude oil quality continues to decrease, and the desired product mix shifts towards distillate and olefins. BASF is a leading supplier of FCC catalyst technologies and has a long history of catalyst innovations. After providing some general background of the FCC process, including a short history as well as details on the process and FCC catalyst design, this talk will discuss several major innovations BASF has introduced over the past decade.

Lucas Dorazio has been a practicing chemical engineer in industry for the last 20 years working in a variety different engineering functions, including over 10 years in catalyst research and development. He currently works for BASF Corporation at their Iselin NJ catalyst research facility where he leads a team of scientists developing fluid catalytic cracking catalysts. He received his BS Chemical Engineering from West Virginia University (1996), MS Chemical Engineering from Manhattan College (2004), and his D.E.S. from Columbia University in New York City (2009) in the field of heterogeneous catalysis where he worked in the group of Marco Castaldi. He started working for BASF over 15 years ago, initially working in their specialty chemicals division and later transferring to catalyst research. He is also an adjunct professor at NJIT where he teaches two courses in the field of catalysis. He has authored several journal articles in the field of catalysis, regularly has presented his work at the meetings of the North American Catalysis Society, and recently co-authored a textbook on the topic of industrial catalysis. He is an active member of the North American Catalysis Society and currently serves as a Director for the New York Metropolitan Catalysis Society.