



Session II: Process Development

Specialty Colorants for Industrial Applications



Dr. Frank Bachmann

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Dr. Bachmann earned his Ph.D. in organic chemistry from University of Hamburg in 1991. He joined Central Research Laboratories of Ciba-Geigy, Basel, Switzerland as a Postdoctoral Researcher. He was absorbed by Ciba-Geigy as a Synthetic Chemist in 1994. He was relocated to Ciba Specialty Chemicals at Grenzach, Germany a year later and worked there till 2009. In 2008, Ciba Specialty Chemicals was taken over by BASF and in 2010 Dr Bachmann returned to the laboratory in Basel where he started his career but which was renamed as Research Centre Basel by BASF. In 2017 he was transferred to BASF Chemicals Private Limited, Navi Mumbai.

During his long association with Ciba and his current tenure with BASF, Dr. Bachmann has worked on a variety of research projects. He has developed hydrophilic carbohydrate polymers for contact lenses and synthesized carbohydrate tensides, UV absorbers for sunscreens and biological complexing agents. He has worked on oxidation catalysts for laundry. He was responsible for developing a tripodal manganese (III) complex which has been commercialised. Since 2003 his research has taken a colourful turn and he has been working on shading dyes, optical brighteners, hair dyes, colour developers for paper and dichroic dyes for electronic applications.

Dr. Bachmann has published 18 papers in reputed international journals. He has 38 patents to his credit of which 4 have been commercialised, which is an outstanding track record.

Abstract

This presentation will discuss two different industrial application fields for pigments along with green and sustainable chemistry. At first, the role of pigments as color filters in LCD displays will be explained and the required properties of such pigments will be discussed. The development of red BASF color filter grades will be displayed. Secondly, the use of pigments for heat management will be described with examples of several such IR reflective pigments (“black chemistry”) and their applications in coatings. Finally, the special story of Cool Black – from a pigment for heat management to an ingredient in special LCD displays – will be narrated.