

EVENT

Latest trends in green chemistry and technology highlighted in Mumbai meet

fluids, micro-reactors, recyclable enzyme

Expanded and broader coverage



Mr. Ravi Raghavan, Editor, *Chemical Weekly*, lighting the lamp



Prof. James Clark, Green Chemistry Centre of Excellence, Inaugurating the exhibition

CASE STUDIES

Novel approaches to developing cleaner processes

maceuticals and the speciality & fine *Lyrica*,

The Pfizer experience

Dr. Peter Dunn, Pfizer Green Che-

duct – was as high as 86, it was difficult

Sustainable development methodology

Front end (Maximise atom efficiency)	Back end (Prevent/reduce pollution & waste)
Process intensification	

was significant, but the undesired en

The choice of process finally ad

The production process was fine-

- chemistry, process intensification, new
- aqueous effluents, soiled organic
- Design footprint – efficacy of the

Green chemistry: one part of sustainability initiatives

- ment, crystallization & milling;
-

Eco-designed C-Glycoside

first eco-designed C-Glycoside using

The synthesis of the first beta-C-



Dr. M.G. Palekar

purification of intermediates &



10% reduction in liquid effluent,



Key role of catalysis



Dr. Raksh Vir Jasra

facture of fine chemicals. He provided

exchanged zeolites as catalysts, sol

EVALUATING PERFORMANCE

‘New paradigms needed to measuring greenness’

hydroxide, along with significant sol

We need to define greenness better. A

sis shifting from efficiency, to one of

Novel green metrics

Catalytic options

vents. “If you have to oxidize do it in

critical fluids, ionic fluids etc. “How

a new Sertralin process of Pfizer where

that while enzymes are biodegradable,

high regio-specificity, they have limita

gy. “Enzyme immobilization is the ans-

Enzyme Aggregates (CLEA), which is

seemingly efficient process with 90%

E Factor of 40% and atom utilization



Dr. John C. Warner

Opportunities in the food chain

begins with science fiction. “Innova-
tion happens not within the field of fo



Prof. James Clark

Taking ideas to the marketplace

commercialization challenges of green

with incomplete material characteriza

tion, field-tested proof-of-utility and

**‘Innovation begins with science
fiction’**

Chief Technology Officer, Warner Bab



Mr. Nitesh Mehta

'Factor in endocrine disruption'

pointed out that chemical hazards must

upon falsified assumptions and reliance

Sustainability by design

Poor processes ?

ways not reflected in current health

in silico *in vitro*

measure specific impacts. “LCA also identifies trade-offs, hot spots and opportunities for resource optimization. It

BIO BASED CHEMICALS

‘Transition from a fossil- to bio-based economy will lead to profound shifts in industry structure’

converted through enzymes/micro-organisms
on the challenges of finding market ac



Multiple alliances emerging

Market potential

a size of about €104-bn by 2012 and to around €264-bn by 2017, with their

Carbohydrates to platform chemicals

Drivers for innovation changing

zero discharge, high feed & product flexibility and more than 80% carbon



FOLLOWING THE LEADER

Global regulatory trends define future course

Chemical Weekly,



He emphasized the need for tech

Short-sighted view of treaties

classification and labeling he said, “In

India mainly address site-specific is

the regulation. “REACH is hazard- and **‘Regulations driving innovation’**