



**Inauguration of National Seminar on Current Trends in Chemical Sciences Research, 28<sup>th</sup> March 2008.**



**Inauguration of National Seminar on Current Trends in Chemical Sciences Research, 28<sup>th</sup> March 2008.**



**Inauguration of National Seminar on Current Trends in Chemical Sciences Research, 28<sup>th</sup> March 2008.**



**Introductory Speech by Dr. S. P. Deshmukh, Convener  
for the National Seminar.**

**Inauguration of National Seminar on Current Trends in  
Chemical Sciences Research, 28<sup>th</sup> March 2008.**



**Inaugural Speech by Dr. G. D. Yadav, Director UICT, Mumbai.  
Inauguration of National Seminar on Current Trends in  
Chemical Sciences Research, 28<sup>th</sup> March 2008.**



**Presidential Address of Dr. S. G. Bhadange, Principal of  
College.**

**Inauguration of National Seminar on Current Trends in  
Chemical Sciences Research, 28<sup>th</sup> March 2008.**



**Key Note Address by Dr. G. D. Yadav, Director UICT,  
Mumbai.**

**National Seminar on Current Trends in Chemical Sciences  
Research, 28<sup>th</sup> March 2008.**



**Prof.[Dr]. D. D. Dhawale Pune University, Pune at National Seminar on Current Trends in Chemical Sciences Research, 28<sup>th</sup> March 2008.**





**Prof[Dr] R. P. Sahay T. M. Bhagalpur University,  
Bhagalpur at **National Seminar on Current Trends in  
Chemical Sciences Research, 28<sup>th</sup> March 2008.****



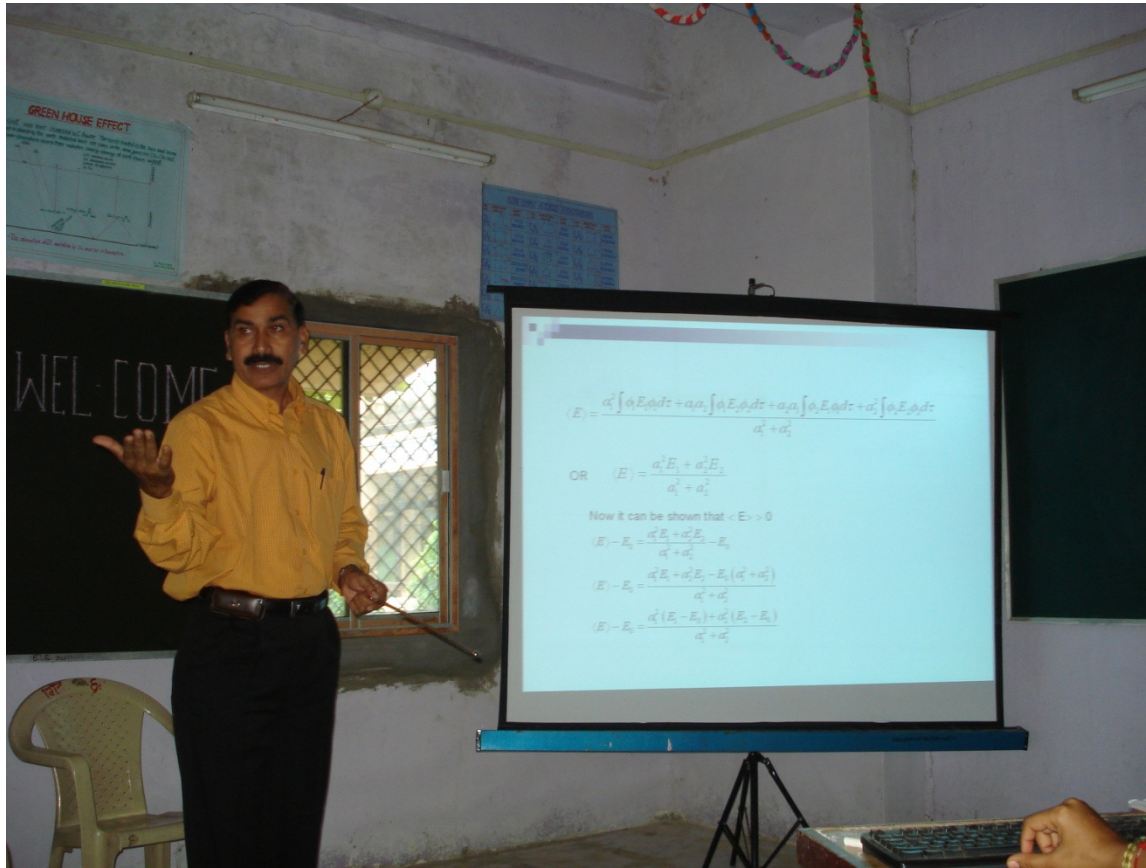
**Valedictory Function: National Seminar on Current Trends in Chemical Sciences Research 28<sup>th</sup> March 2008.**



**Valedictory Function of National Seminar: Chef Guest  
for the function Prof. Dr. Kamal Singh, Vice-Chancellor  
SGB Amravati University, Amravati.**



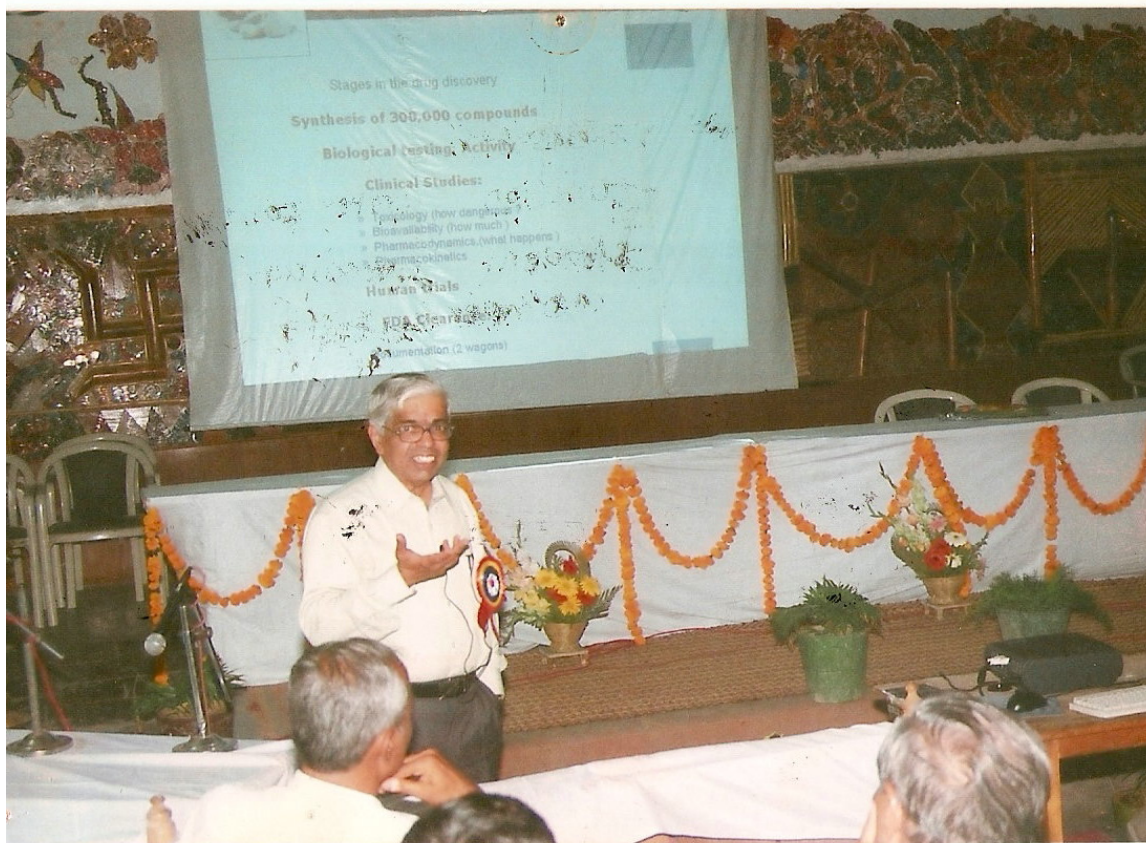
Teachers day Celebration: **Inauguration**



**Guest Lecture: Dr. S. S. Dhondge, Nagpur.**



**Guest lecture: Prof.[Dr]. H. D. Juneja, Head Department of Chemistry RTM Nagpur University, Nagpur.**



**Lecture of Dr. Natu, Scientist NCL Pune,  
at Annual convention of chemistry teachers 16<sup>th</sup> April 2006.**



**Guest lecture: Prof.[Dr]. V. S. Jamode,  
Pro. Vice-Chancellor, SGB Amravati University, Amravati.**

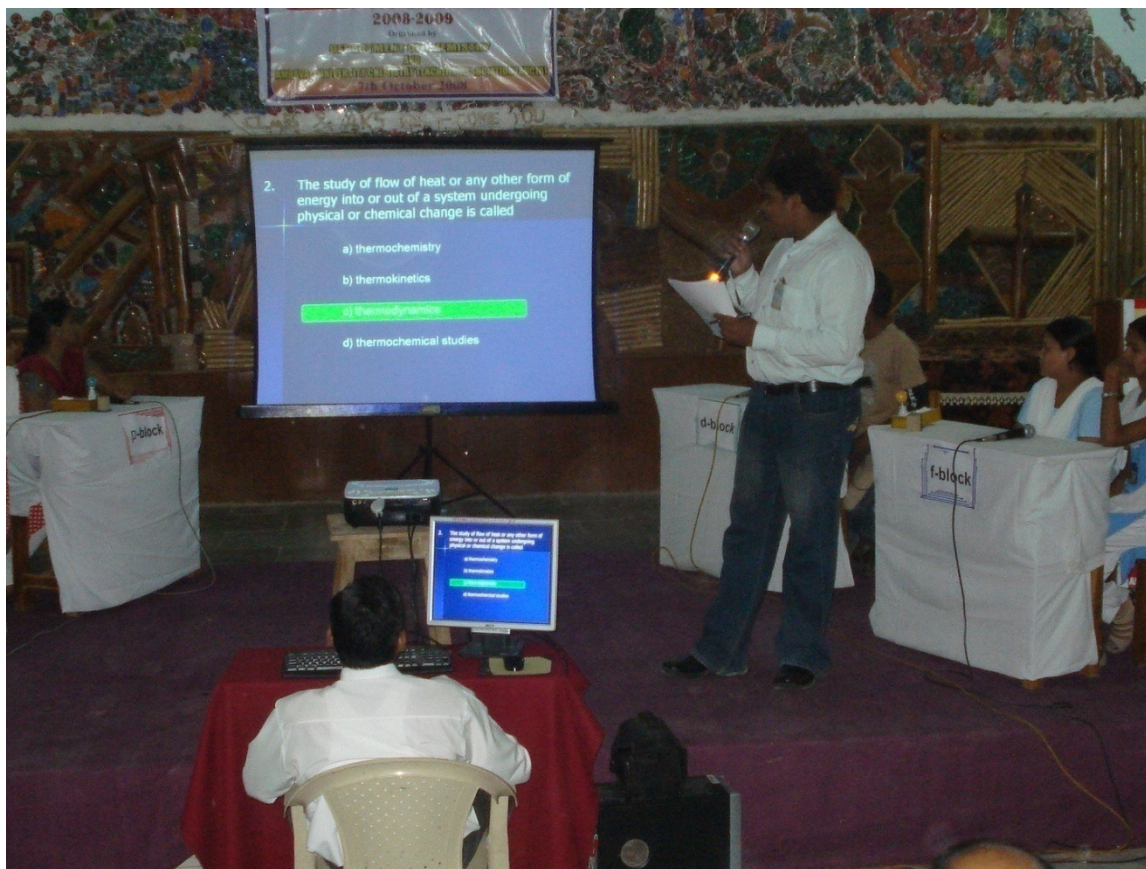




**Guest lecture: Dr. B. K. Deshmukh, General Director,  
Dow Chemicals, USA.**



**Inauguration of Chemical Society 2008 – 09.**



**Intercollegiate Quiz Competition for UG Students.**



**Intercollegiate Quiz Competition for UG Students.**



**Prize Distribution Intercollegiate Quiz Competition for  
UG Students.**



**Celebration of Nobel Prize in Chemistry 2009 With Nestle India Ltd.**



**Celebration of Nobel Prize in Chemistry 2009 With Nestle India Ltd.**



**Inauguration of Science Exhibition**





**Science Exhibition: Andha Shradha Nirmulan Programme.**



## Science Exhibition



**Food adulteration detection camp in NSS Camp held at Sanglud  
Dist. Akola**

CG-43

## NATIONAL CONFERENCE ON GREEN CHEMISTRY & ITS PERSPECTIVE

### SYNTHESIS OF 1-HEPTA-O-BENZOYL-β-D-MALTOSYL-O-ALKYL CARBAMETES

A. R. Sarag, A. G. Sarap, and S. P. Deshmukh\*  
P.G. Department of chemistry,  
Shri Shivaji College, Akola-444001,  
Email: sarag.ashish@rediffmail.com

**KEY WORDS:** synthesis, maltosyl isocyanate, alcohols, carbamates.

**ABSTRACT:**  
The present communication describes the synthesis of 1-Hepta-O-Benzoyl-β-D-Maltosyl-O-alkyl carbamates. Certain N-linked maltosylated carbamates finds some therapeutic values in the disorders like tumor, inflammation, diabetes and AIDS etc. It also acts as a bacteriostatic antifungal agent. The presence of maltosidic moiety in the compound enhanced the biological activities. It was therefore of keen interest to synthesize some new 1-hepta-O-benzoyl-β-D-maltosyl-O-alkyl carbamates by the interaction of Hepta-O-benzoyl-β-D-Maltosyl isocyanates with different alcohols. The structure of all the synthesized compounds were established on the basis of chemical transformations, elemental analysis and NMR, Mass spectral studies.

**Reaction:**

Hepta-O-benzoyl-β-D-maltosyl isocyanate (I) + Alcohols (II a-g)  $\xrightarrow{\text{Reflux 3hr}}$  1-Hepta-O-benzoyl-β-D-maltosyl-O-alkyl carbamate (III a-g)

When R = -a) methyl b) ethyl c) n-butyl d) iso-propyl e) n-propyl f) t-*butyl* g) *iso*-amyl

**Table-I: Characterization data of 1-Hepta-O-Benzoyl-β-D-maltosyl-O-alkyl carbamates (III a-g)**

Product (g)	m.p. (°C)	Yield (%)	Analysis Found/Calculated (%)	IR (cm <sup>-1</sup> )
III a	104-108	79.42	1.11 (1.24)	-333.221 (6.9/96)
III b	112-114	89.64	1.17 (1.25)	-315.22 (6.1/89)
III c	116-118	84.72	1.07 (1.19)	-272.65 (6.9/89)
III d	125-128	78.01	1.28 (1.21)	-302.78 (6.1/89)
III e	135-138	76.01	1.09 (1.21)	-296.27 (6.1/89)
III f	140-142	82.01	1.11 (1.21)	-313.66 (6.1/89)
III g	175-180	63.57	1.19 (1.21)	-313.66 (6.1/89)

The IR spectra of product shows the characteristic absorption of N-H, C=O, C-O, C-H. The NMR spectrum of product distinctly displayed signal due to benzoyl proton and aromatic protons.

**References:**  
 1) Irving Goodman, *Adv. Carbohydr. Chem. Biochem.* 1958, **13**, 215 – 236  
 2) S. K. Bhagat, S. P. Deshmukh, M. Musaddique, *Ind. Chem. Sec.* 2003, **80**, 916 – 917.  
 3) Zerong Wang, Mahfuza M., Samia Sheikh, *Ind. Chem.* **10**, 1325-1334.  
 4) D. V. Manjunath, *Ind. Chem.* **10**, 1325-1334.

**Flowchart:**  
 MALTULOSE  $\xrightarrow{\text{Benzoyl chloride, pyridine}}$  Octa-O-Benzoyl Maltose  $\xrightarrow{\text{Bromine in Acetic acid}}$  Hepta-O-Benzoyl Maltosyl Bromide  $\xrightarrow{\text{Lead Cyanate, 3Hrs. Reflux}}$  Hepta-O-Benzoyl Maltosyl Isocyanate  $\xrightarrow{\text{ALCOHOLS, 3Hrs. Reflux}}$  1-HEPTA-O-BENZOYL-β-D-MALTOSYL-O-ALKYL CARBAMETES

**Presentation of Research Students at Indian Science Congress.**



**Presentation of Research Students at Indian Science Congress.**



**Presentation of Research Students at Indian Science Congress.**



**Ms. A. S. Dandale Research Student of the Department Facing Open Defense Viva for Ph. D.**



**Ms. A. S. Dandale Research Student of the Department  
Facing Open Defense Viva for Ph. D.**