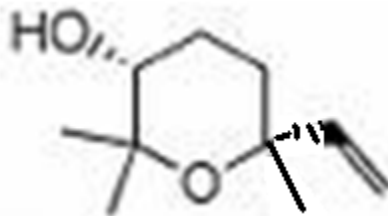


➤ **Perfumery and cosmetic molecules**

Essential oils are highly concentrated and potent oils extracted from plants, leaves, flowers, roots, buds, twigs, rhizomes, heartwood, bark, resin, seeds and fruits. Essential oils are found in special secretory glands or cells within plant life. They display characteristic odor, which is due to particular constituents of their essential oil. Fragrance specific flowers are 1) CHAMPAKA 2) LOTUS 3) BAKUL 4) ROSE

5) KEWRA 6) KADAMBA 7) BASIL 8) JASMINE 9) PARIJATAK 10) TUBEROSE 11) HEENA 12) LAVENDER etc. All these flowers have typical smell.

For example Champak, flower has linalool oxide as one of its component together with Methyl Benzoate Methyl Linoleate, Eugenol, Benzyl Benzoate, 2-Phenyl Ethyl Benzoate, Cinnamyl Benzoate (E)-Cinnamyl Alcohol. Typical smell is due to a mixture of constituents with synergetic effect.



Champak flower Linalool Oxide,

Magnolia champaca

Essential Oils are used in aroma therapy for treatment of

- Anxiety
- Depression
- Drive Out Fatigue
- Anger
- Enhance Confidence

- Enhance Concentration

Several molecules have been synthesized by Dr. Bhat's group for perfumery/cosmetic applications. Processes for synthesis of some perfumery/cosmetic molecules such as ambrox[®], florol[®], rose oxide, geosmin[®], WS-3[®], helvetolide analogues etc. have been sponsored by S. H. Kelkar and Co., Ltd.

Few patents from her laboratory for perfumery applications are as follows:

1. **Sujata V. Bhat**, Ravindra D. Gaikwad and K. R. Vaze, **2015**, Synthesis of chirally enriched 2,4-disubstituted tetrahydropyran-4-ol and its derivatives "PCT/IN2015/000390 dated 16th October, 2015, WO2016059648 A1, Publication date April **21 2016**' US patent 2017/ 0247349A1; Granted US 10,040,775 **B2 Aug. 2018**, WO2016059648A1, Chem Abstr 164:519633.

This patent is also filed in other countries such as Europe, China, Japan, UAE, Mexico etc.

2. **Sujata V. Bhat**, Ravindra D. Gaikwad and K. R. Vaze, **2014**, One-pot stereoselective synthesis of 2,4-dialkyl tetrahydropyran-4-ol and 4-acyl-2,4-dialkyl-tetrahydropyran structures for pharmaceutical and perfumery applications, Indian application 3333/MUM/2014 dated 18/10/2014.
3. **Sujata V. Bhat**, S. Fernandes and K. R. Vaze, **2013**, ***Synthesis and Perfumery applications of Novel Odorants: Synthesis of (5H)-1-benzopyran-5-one derivatives and formulations for perfumery/ flavor applications***, PCT Application No PCT/IN2013/000645, WO 2014/064716 A1, May **2014**.

4. **Sujata V. Bhat**, S. Fernandes and K. R. Vaze, **2012**, ***Synthesis and Perfumery applications of Novel Odorants: Synthesis of (5H)-1-benzopyran-5-one derivatives and formulations for perfumery/ flavor applications***, Indian Patent, Application No.3097/MUM/2012.

Bio-succinic acid derivatives

Her group prepared several Bio-succinic acid derivatives and formulations for cosmetic applications for Bio-Amber, USA.

Some natural molecules are modified semi-synthetically for value addition in perfumery application.