

## SCC ONTARIO CHAPTER LUNCH MEETING

*"Use of Cryo-SEM and EDS for sunscreen characterization:  
An Observation of mineral UV filters in O/W emulsions"*

*Abhijit Bidaye*

**February 6th, 2025**

**Location:** The Venetian Banquet & Hospitality, Centre 219 Romina Drive,  
City of Vaughan, ON, L4K 4V3, (tel: 905-264-9960)

**Time:**

12:30 p.m. Registration/Networking

1:00 p.m. Lunch

2:00 p.m. Presentation

**Fees:**

\$60 pre-paid SCC member

\$70 pre-paid non-member

\$30 pre-paid student

\$75 at the door



*Abhijit Bidaye*

**Abstract:**

The difficulty of stabilizing sunscreen emulsions is normally associated with increased mineral UV filters for reaching high SPF. One of the biggest causes of instability is the UV filter location within the emulsion system. It is intended to observe this behavior using Cryo-SEM with elemental analysis technique, demonstrating the benefits of being able to visualize the microstructure of the emulsion. SAXS analysis is performed to understand the unusual behavior of the mineral filters. The images are taken by freezing a small sample plugged into slushed liquid nitrogen. An image analysis offers a better insight into the behavior of all UV filters tested in combination with the various emulsion types. The use of Cryo-SEM and EDS promises to understand the correlation between stability and the location of UV filters within the emulsion structure of various types. Use of SAXS analysis helps understand the effect of the emulsifier and microstructure of the stability of the emulsion and helps understand the distribution of the actives.

**Biography:**

Abhijit Bidaye is the Applications Manager – Consumer Care at Croda Inc. During his 27-year career in the personal care industry, he has spent 25 years of his employment on the supply side of the industry with Croda Inc. in both Skin Care and Hair Care. His current focus is on Sun care, Color cosmetics and Sustainable innovation. Abhijit is a graduate of University of Cincinnati MS in Cosmetic Science program. He has BS in Pharmacy from University of Pune, India. He has presented at various industry related events and has chaired NYSCC Sunscreen symposium events.

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