

Organized by  **CENTER OF EXCELLENCE** @ Venture Center

Supported by  **VENTURE CENTER**

IMMERSIVE TALKS

WITH WASTE-TO-VALUE (W2V) DOMAIN EXPERTS

Innovative technologies for renewable monomers from waste by Dr. Prakash Wadgaonkar (Emeritus Scientist at Polymer Science and Engineering Division, CSIR-NCL)

(Thursday) 29 Oct 2020, Time: 4-5 pm



W2V Talk Series : Talk 8 : Innovative technologies for renewable monomers from waste - by Dr. Prakash Wadgaonkar

**Valorization of Cashew Nut Shell Liquid (CNSL):
A Versatile Agro-waste Material**



Prakash P. Wadgaonkar
Polymer Science and Engineering Division
CSIR-National Chemical Laboratory,
Dr. Homi Bhabha Road, Pune-411008, India
Email: pp.wadgaonkar@ncl.res.in
Tel: +91-20-2590 2306

October 29, 2020



Cashew Nut Shell Liquid (CNSL): Extraction



Extraction of natural and technical CNSL from cashew nut shells

Extraction Method
Thermal Extraction
Solvent Extraction
Pyrolysis

1. Static Solvent Extraction
2. Soxhlet Extraction
3. Ultrasonic Extraction
4. Supercritical CO₂ Extraction

Our Approach to Valorization of CNSL

Leveraging current eco-system and addressing call from Nation.




Atmanirbhar Bharat The Road Ahead

5 Pillars of Self-Reliant India

- Economy:** Quantum jumps, not incremental changes
- Infrastructure:** One that represents modern India
- System:** Technology driven
- Demography:** Vibrant demography of the largest democracy
- Demand:** Full utilization of power of demand and supply

Atmanirbhar Bharat Abhiyan

Package of ₹ 20 lakh crores (about 10% of GDP*)

Focus on Land, Labour, Liquidity and Laws

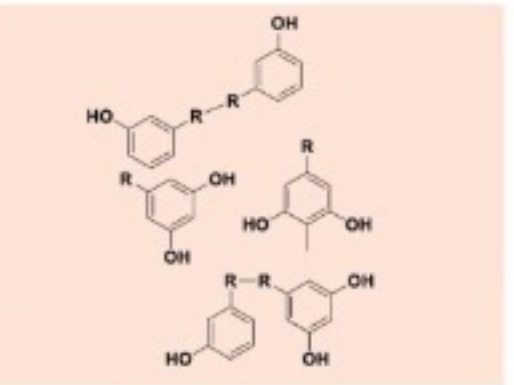
To cater to labourers, middle class, cottage industry, MSMEs and industries among others

Bold Reforms- Need of the Hour

- Supply Chain Reforms for Agriculture
- Rational Tax System
- Simple and Clear Laws
- Capable Human Resource
- Strong Financial System

<https://aatmanirbharbharat.mygov.in/>

CNSL-based Friction Materials



Automotive Break Industry

- Brake linings
- Disc pads
- Blocks
- Belts together
- Rail break shoes
- Binder resins

Train

Tire bead Filler

Friction Materials

- Improved wear reduction
- Lighter color
- Increased hardness
- Excellent anti-corrosion properties
- Reduce noise
- Superior heat resistance at elevated (>400 °C) temperatures
- Decrease in the coefficient of friction
- Improve Wear and fade
- Increased flexibility

Total Number of Participants :
50 Zoom + 7 Facebook Live = 57