

DBT-CTEP Sponsored Seminar on

“Recent advances in the use of Biomaterials for the treatment of chronic wounds: An multidisciplinary approach, current trends and future prospects”

-Dr. Karri V V S Narayana Reddy

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The Department of Pharmaceutics, JSS College of Pharmacy, Ooty organized this seminar by Virtual mode (Zoom webinar Platform) and was coordinated by Dr. Karri V V S Narayana Reddy, Asst. Professor, Dept. of Pharmaceutics, JSS College of Pharmacy, Ooty. In the Inaugural session, the Patron of the Programme: Dr. S. P. Dhanabal, Principal, JSS College of Pharmacy, Ooty delivered the genesis of this lecture series and the Convener: Dr. Gowthamarajan K., Professor and Head, Dept. of Pharmaceutics, JSS College of Pharmacy, Ooty welcome the participants and introduced the Speakers to the delegates.

The eminent resource persons Prof. Dr. Rajkumar Malayandi, Dr. Suresh Kumar A, Dr. Renjith P. Johnson, Dr. Karri V V S Narayana Reddy, Dr. K. Gowthamarajan & Dr. TK Praveen the subject experts in the field of wounds have delivered the lectures on the insight into **Recent advances in the use of Biomaterials for the treatment of chronic wounds: A multidisciplinary approach, current trends and future prospects**. About 105 registrations across India. We sincerely hope such programme will be start up for many more research collaborations and leading to exchange of knowledge. Over the period of two days, the following resource persons and their lecture schedule was conducted:

The seminar was sponsored by Department of Biotechnology, Govt. of India and the event has brought reputed clinicians, leading academic scientists, and researchers in the field of chronic wound care under one roof. In this seminar the discussion on recent scientific findings in the hope of improving the management of complex and chronic wounds to provide exceptional knowledge for academics and industry researchers. This has provided a premier multidisciplinary platform for researchers, practitioners and academicians to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered, and solutions adopted in the fields of Wound Care.



Mathematical Modelling

- Wound healing mathematical models are complex models describing the physiological and pathological process of wound formation and healing via integrating the different physiological, pathological and therapeutic parameters.
- Empirical mathematical models: Obtaining the data and screening for best fit model. It is known as retrospective modeling and upon validation could be used for prospective analysis
- Semiempirical models: Bridging models use mathematical and mechanistic approach and could be useful for clinical meta-analysis
- Mechanistic Models: Integrating physiological, environmental and pathological process using suitable sets of mathematical equations and [employing a suitable algorithm](#) for predictive analysis

Therapeutic approaches towards wound healing

Hydrogel scaffolds

Highly cross-linked water swollen networks

Polymers: Poly(ethylene glycol), Poly(vinyl alcohol), Poly(vinyl pyrrolidone), Poly(2-hydroxyethyl methacrylate)

500 μm

promote cell adhesion, proliferation and migration

Polymer hydrogels

Passive transdermal Delivery

Stimuli responsive drug-eluting dressings

Diabetes a Huge Growing Problem

2021

537 million adults living with diabetes

World

Year	Population
2065	7.93 billion
2030	8.43 billion
2021	7.93 billion

46% increase

Indian Statistics (74.2 M, 2021)

Year	Population
2045	134 M
2021	74.2 M

23% Trendency of Diabetes around 100 years