AMC DENTAL COLLEGE AND HOSPITAL

Value added course on Plasma Based Technologies Developed In IPR for Health Sector – A Dental Science Perspective

ACADEMIC YEAR 2019-20

1. **Nomenclature of the Course**:

Value added course on **Plasma Based Technologies Developed In IPR for Health Sector – A Dental Science Perspective**

Background

Although biomedical application of plasma technology has become very popular in various fields today, it is not clear when it was first used in the field of dentistry. It is partly because the plasma has been nearly everywhere and has been related to nearly everything in reality, thus we do not readily recognize it. Perhaps the first application of plasma in dentistry occurred in the manufacturing process of dental instruments or the disinfection of them. This review describes the contemporary aspects of plasma application in dentistry.

2. **Objectives of program**

This three-day course module offers a comprehensive understanding of plasma technology's diverse applications in various dental specialties, from sterilization and periodontics to endodontics, implantology, and future trends. The hands-on workshop and case studies provide practical insights for dental professionals aiming to leverage plasma technology in their practice.

3. **Offering Institute and Faculty:**

The Course is offered by AMC Dental College And Hospital,Ahmedabad and Institute of Plasma Research, Gandhinagar

4. **Who Can Participate in the Course**

Interested dental student, interns, post graduates at Amc Dental College and Hospital can participate in the course.

5. **Duration of the Course**

The total duration of the course is 22 hours

6. **Course Fee:** There will be no fee for the course

7. **Award of Certificate**

The students completing 80 % attendance will be awarded the course completion certificates.

8. Course Content

Day 1: 8 hours

Venue- AMC Dental College

Introduction to Plasma and Its Dental Applications

Session 1: Basics of Plasma Technology

- **Introduction to Plasma**: Understanding the fundamentals of plasma and its states.
- **Plasma in Dentistry**: Overview of how plasma technology is applied in dental practice.

Session 2: Types of Plasma and Generating Methods

- **Plasma Types**: Exploring different types of plasma used in dentistry, such as cold atmospheric plasma and low-temperature plasma.
- **Plasma Generation Techniques**: Understanding methods for generating and applying plasma in dental procedures.

Session 3: Plasma Sterilization and Disinfection

- **Sterilization and Disinfection Principles**: Explaining the role of plasma in sterilizing dental instruments and disinfecting surfaces.
- **Advantages of Plasma**: Discussing the advantages of plasma over traditional sterilization methods.

Day 2: 8 hours

Session 4: Plasma in Periodontics and Oral Surgery

- **Plasma for Periodontal Therapy**: Exploring the use of plasma in treating periodontal diseases and promoting tissue regeneration.
- **Surgical Applications**: Understanding plasma applications in oral surgeries for tissue ablation and wound healing.

Advanced Applications and Future Trends

Session 5: Plasma in Endodontics and Restorative Dentistry

- **Plasma in Root Canal Treatment**: Exploring the use of plasma for disinfection and treatment in endodontics.
- **Restorative Applications**: Understanding plasma-assisted techniques for better bonding and restorative procedures.

Session 6: Plasma for Implantology and Prosthodontics

- **Implant Surface Modification**: Exploring plasma technology's role in modifying implant surfaces for better osseointegration.
- **Prosthetic Adjustments**: Discussing plasma-assisted adjustments and modifications in prosthodontics.

Day 3: 6 hours

Venue: Half day visit to IPR, Gandhinagar

Session 7: Lecture on Plasma Biocompatibility and Safety Considerations

- **Biocompatibility of Plasma**: Understanding the safety aspects and biocompatibility of plasma in dental applications.
- **Regulatory Compliance**: Discussing regulatory standards and guidelines related to plasma use in dentistry.

Session 8: Observation of various plasma instruments present at IPR and plans to use these available resources for research in dentistry.

- **Current Research Trends**: Exploring ongoing research and innovations in plasma technology for dental applications.
- **Future Directions**: Discussing potential breakthroughs and advancements in the field.

Session 9: Conclusion and Certificates

- **Summary and Key Takeaways**: Summarizing key insights and learnings from the two-day module.
- **Certificates of Completion**: Providing certificates to participants for successful completion of the course on plasma in dentistry

Program Coordinator
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