**Fluoride Diffusion in Dentin & Enamel Using Restorative Dental Materials**  
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**NNIN Facility utilized: Characterization Facility**

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**DESCRIPTION OF WORK**
- Bovine tooth samples were used for the study.
- Class V cavity was cut and restored with fluoride containing restorative materials.
- After aging in deionized water for 2 weeks, the samples were sectioned and analyzed using EDS (Energy dispersive spectroscopy).

**Rationale:**
- In the last few decades enamel remineralization has been a major subject of dental research.
- Fluoride is considered an important factor in promoting remineralization of carious lesion.
- It is generally accepted that dentin is capable of remineralization but the distribution of mineral ions in the presence of fluoride within the lesion body and the depth at which the lesion can still be remineralized are not well clarified at present.

**MAJOR OBSERVATIONS**
- Presence of fluoride near the tooth restoration interface.
- Percentage of fluoride decreased sharply as the distance increased.

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[Image of fluoride diffusion analysis and graphs demonstrating fluoride presence and distribution.]