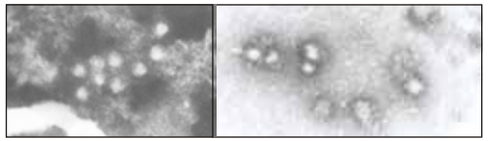
Electron Microscopy

- The first Transmission Electron Microscope (TEM), Philips EM 301, was installed at NIV in 1975.
- The major application areas included ultrastructural studies on viruses.
- NANB virus particles in stool samples of hepatitis patients were visualized for the first time using this microscope. This virus was subsequently designated as hepatitis E virus.

- In 2000, a state-of-the art advanced digital cryo-TEM system (Tecnai 12 Biotwin, FEI Holland) was installed for in-depth studies on structural and morphological aspects of viruses.
- The direct visualization of a *Rhabdovirus* isolate from clinical samples of acute encephalitis cases in Andhra Pradesh in 2003 with this TEM subsequently led to incrimination of the Chandipura virus as a new human encephalitis virus.



JE virus *DEN-2 virus*

Immunelectron microscopy (IEM): A rapid virus detection and diagnosis technique

CPC Universal cryo-workstation and the cryo-ultramicrotomy unit.

Viruses can be "frozen" in liquid nitrogen and then imaged in a cryo-TEM. True biological structures of viruses and 3D reconstructions are possible from such data.

The Electron Microscopy is a core facility, providing ultrastructural research support to scientists.