

Preserving ancient manuscripts

MODERN TECHNOLOGY is lending a helping hand to preserve and archive centuries-old Indian manuscripts, most of which are in a bad shape.

The National Institute of Advanced Studies (NIAS) at Indian Institute of Science (IISc) in Bangalore reports that sophisticated digital still cameras offer a cost-effective method to copy manuscripts for preservation.

The method allows in-house copying of yellowed books that tend to crumble in hand as one reads or photocopies them.

The scientists successfully used the method with an ancient copy of the Bhagwad Gita.

The team of Sangeeta Menon and George Williams first used a video camera, camcorder, to image the text. Later they improvised the method by using a still digital camera.

The digital video (DV) format simply records everything as a binary code onto a mini digital video tape.

The scientists first tested a DV camcorder that weighed less than two kg even with an eight-hour battery and was connected to a computer.

The digital image can be converted into text. The computerised images can be stored on CDs which have at least a half-century life.

Trying to improvise on this method, they next tested a digital still camera with extra large memory cards — about three inches by three inches in size and with eight megabytes memory.

The memory cards were then removed from the camera and its contents stored in a computer memory.

Reporting the details of their technique in *Current Science*, the scientists recommended that India should immediately begin a ten-year project to digitally copy all ancient manuscripts with the new and relatively inexpensive technology.

They estimate that the digital process requires an initial equipment investment that is one-twentieth or one-thirtieth of conventional microfilming techniques. Besides, no additional costs on filming and processing are required. Comparatively, traditional methods of preservation such as photography, microfilming and photocopying are costly, have sometimes damaged the original and help preserve for only a few decades more.

Manuscripts could get lost during microfilming, while scanners are relatively slow and can damage manuscripts, especially those that are deteriorating. Another option is to first microfilm the manuscript and then use a scanner to digitise the manuscript as images. But it is very expensive.

The NIAS scientists report that not only did the digital camera procedure work superbly, but it also offered a way to reverse neglect and damage of rare cultural treasures of India.