



**Society of Motion Picture & Television Engineers**  
**New York Section Meeting Notice**

**April 2007**

**Film Restoration:  
 Defect Detection and Correction Using  
 Infrared Enabled Film Scanners**

**DATE: *Wednesday*, April 25, 2007**

**5:30 PM Refreshments and Social Hour**

**6:30 PM Technical Presentation**

**LOCATION: 360 West 31st Street (between 8th and 9th Avenue) 2nd Floor. Enter on 31st Street; walk through the building and use the elevators on the 9th Avenue side up to the 2nd floor.**

**New York, NY 10001**

**SUBWAY:**

**Subway(1,A,C,E,) to 34th St. Walk to West 31st Street**

**••• PROGRAM •••**

**Presenters:**

**Gabriel Fielding, Research Scientist, EASTMAN Kodak**

**John Dowdell III Director of Imaging Technology, Goldcrest Post**

Dirt removal and scratch correction are common tasks in film-restoration projects. Finding and repairing defects on every digitally-scanned film frame can be a tedious process involving many hours of an operator's time even with the best restoration software available. But recent advances in infrared scanner technology coupled with improved image processing algorithms have dramatically reduced the time needed to detect and correct pixels affected by dirt, dust, and scratches. Illuminating the film with infrared light produces an additional record of information in the scanner. Algorithms in the scanner use mathematical models of the transmission properties film to produce an estimate of defects in the frame. These defects can then be corrected in the RGB color records using sophisticated image processing methods. Alternatively, a defect matte can be produced allowing the use of third-party correction software. This presentation will describe the hardware and software elements of infrared scanning. The second part of the program by John Dowdell III will show examples of how Kodak's Digital ICE technology (embedded in an Arri film scanner) has been used by Goldcrest Post in their restoration processes.

**Next Month: The May 16th Meeting**

**The 2007 NAB Wrap up at HBO**

Updated 03-26-2007

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