L. Cappelletti, M. Feeri, and G. Nicoletti, “Vibrotactile colour rendering for the visually impaired within the VIDET project,” Telemanipulator and Telepresence Technologies V, vol. 3524, pp. 92- 96, Nov. 1998.

Three vibrators on the fingertips. Intensity of vibration is proportional to the intensity of red, green and blue colors. Part of the Virtual reality for the visually impaired: VIDET project. 13 colors were delivered in two experiments. First expt delivered the cues themselves while the second one sent cues as users scanned a bitmap image using a mouse. The vibrations were varied as the user moved the mouse to a new color.

M. Brell, D. Roßkamp, and A. Hein, “Fusion of Vibrotactile Signals Used in a Tactile Display in Computer Aided Surgery,” *Proceedings of the 6th international conference on Haptics: Perception, Devices and Scenarios*, Madrid, Spain: Springer-Verlag, 2008, pp. 383-388.

Navigation system for Computer Aided Surgery. 6 cylindrical vibrotactile motors placed on the fingers to indicate direction of movement of the hand. Experimented with magnitude and location of vibration. Found that 50% duty cycle was the best and users were able to perceive saltation effect when more than one motor was vibrated simultaneously. Tested on only 3 users.

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A.M. Murray, R.L. Klatzky, and P.K. Khosla, “Psychophysical characterization and testbed validation of a wearable vibrotactile glove for telemanipulation,” *Presence: Teleoper. Virtual Environ.*, vol. 12, 2003, pp. 156-182.

a vibrotactile glove using miniature voice coils to address our concerns. The glove provides continuous vibrotactile feedback to the user and does not exhibit actuation latencies. User’s response characterization was accomplished through a series of psychophysical experiments to evaluate a human operator’s sensitivity to vibration on his/her fingertips. We conducted three such experiments. The first two experiments examined how to vary the glove’s vibrations optimally in order to provide discriminable stimuli to the wearer by measuring the user’s response to variations in a single voice coil’s signal amplitude and frequency. Our third psychophysical experiment extended this work to investigate interaction with multi-finger vibrotactile stimulation.