

36S0240

**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY
CHIKMAGALUR-577102**

PROJECT REPORT

K S C S T

7063

PROJECT TITLE:

**“A MULTI-RESOLUTION IMAGE FUSION SCHEME FOR 2D
IMAGES BASED ON WAVELET TRANSFORM”**

PROJECT PROPOSAL REFERENCE NO. : 36S0240

Submitted to:

The Secretary,
Karnataka State Council for Science and Technology (KSCST)
Indian Institute of Science Campus,
Bangalore- 560012.

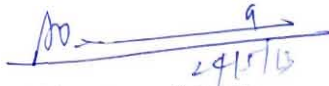
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5. Introduction:

Image fusion is the process by which two or more images are combined into a single image retaining the important features from each of the original images. The fusion of images is often required for images acquired from different instrument modalities or capture techniques of the same scene or objects (like multi-sensor, multi-focus and multi-modal images). For example, in multi-focus imaging one or more objects may be in-focus in a particular image, while other objects in the scene may be in focus in other images. For remotely sensed images, some have good spectral information whereas others have high geometric resolution.

With the recent rapid developments in the field of sensing technologies multi-sensor systems have become a reality in a growing number of fields such as remote sensing, medical imaging, machine vision and the military applications for which they were first developed. The result of the use of these techniques is a great increase of the amount of data available. Image fusion provides an effective way of reducing this increasing volume of information while at the same time extracting all the useful information from the source images.

Multi-sensor data often presents complementary information about the region surveyed, so image fusion provides an effective method to enable comparison and analysis of such data. The aim of image fusion, apart from reducing the amount of data, is to create new images that are more suitable for the purposes of human/machine perception, and for further image-processing tasks such as segmentation, object detection or target recognition in applications such as remote sensing and medical imaging. For example, visible-band and infrared images may be fused to aid pilots landing aircraft in poor visibility.