Appendix-IV: The GUI Application Software

The proposed methods for Gram-staining characterization, identification, classification and cell growth phase analysis and cell division time determination developed and tested in the present study are bundled into a GUI application software package. It has been developed in MATLAB platform on experimental basis. This can be, further, designed as an embedded system software using C/C++ for deployment in the intelligent vision systems for use by the microbiologists and pathologists in their routine investigations on the bacterial cell image analysis.

Some of the screen shots of this GUI application are presented below:

1. Main menu of the GUI application software
2. Gram-staining characterization menu

3. The output screen showing the result of Gram-staining based on color for an input original image
4. The output screen showing the result of Gram-staining based on cell wall structure for an input original image

5. The output screen showing the classification results of an input bacterial cell image
6. The output screen showing the sub classification results of Bacilli bacterial cell subgroups.

7. The output screen showing the sub classification results of Cocci bacterial cell subgroups.
8. The output screen showing the sub classification results of Spiral bacterial cell subgroups.

9. Resultant screen showing automated cell growth phase analysis of bacilli cells.
9. Resultant screen showing automated bacterial cell division time determination.