ACKNOWLEDGMENT

The research work presented in this thesis has been carried out under the guidance and supervision of Prof. V K Vaidyan, Head, Department of Physics, University of Kerala. The work was started with an oscilloscope, signal generator, multimeter and some electronic components and metallic hardware. It is only because of the intellectual freedom I enjoyed with him that I could complete my attempts successfully to a large extent. I express my deep and sincere gratitude to him for every of his valuable directions and supports.

Always, I am obliged to Prof. Andreas Mandelis FAPS FSPIE, Director, Centre for Advanced Diffusion Wave Technologies, University of Toronto, for his precious love, blessings and favours.

I am gratefully indebted to Prof. Jacob Philip, Formerly Head, Department of Instrumentation, Cochin University of Science and Technology who introduced me to the wonderful world of Photothermal Sciences.

I am deeply indebted to Dr. Mary Stella, Professor of Physics, FMN College, Kollam for her invaluable favors and encouragement.

I express my sincere thanks to Fr. (Dr.) Benedict Paul, Church of Saints Philips and James, New York and Prof. E V Wilson, FMN College, Kollam for their valued favors.

I am constantly obliged to all my friends and colleagues for their support and encouragement.

April 28, 2005

K SREEKUMAR