DESIGN FABRICATE AND DETERMINATION OF THE CHARACTERISTIC OPTICAL FIBER LENS

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Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Physic
in the Faculty of Applied Sciences,
Universiti Teknologi MARA

NOVEMBER 2010

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ACKNOWLEDGEMENT

Firstly,I would like to express my sincere gratitude to my supervisor, Assoc Prof Dr Mohd Kamil Abd Rahman for her patience throughout my studies. It takes a lot of effort, advises, support and interest from her to guide me for the whole period of completion of this thesis. Thanks also for her constructive criticism of this manuscript; without her support and encouragement this project would not have been possible. Also my special thanks Miss Syafiqa, Mr. Ameerul and Miss. Jannah for their technical support and providing the raw materials needed in this study. Lastly, I offer my regards to all who supported me in any aspect during the completion of the project.

Mohd Hazwan Bin Abdul Rahman

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ABSTRACT

The efficient coupling between fiber to laser diode or fiber to fiber has been problem in general of general concern since the advent of fiber-optic communication system. Fiber lens are regularly used in fiber coupling. Fiber lens also particularly attractive in optical fiber communication, as they make the design of more compact optical component and modules possible But the efficiency of the need to be improved since the large working distance and the large beam waist had been concern as a problem. The fiber lens were made by using optical fusion splicer Type-36 by melting the tip of the fiber. The variable of the lens fabricate to create the variable of beam output which is ball lens, tapered ball lens, hemispherical, tapered hemispherical, conical and tapered conical. So to evaluate the performance of the fiber lens, one need to measure its characteristic, including the location of focal point, the working distance and the beam waist. The properties of the designed fiber lens can be simulating in the ZEMAX to see to characteristic of the fiber lens. As project, the tapered conical have the smallest working distance and compatible beam waist for coupling.