|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | Design of 32X20 Gbps Hybrid Technique of PDM-WDM and its performance analysis for channel capacity enhancement | | |
| **Author(s) Name:** | S. Nahar, R. M. Arnob, Mohammad Nasir Uddin | | |
| **Contact Email(s):** | drnasir@aiub.edu | | |
| **Published Journal Name:** | 2nd International Conference on Computing Advancements (ICCA '22) | | |
| **Type of Publication:** | Conference | | |
| **Volume:** |  | Issue |  |
| **Publisher:** | IEEE | | |
| **Publication Date:** | Published – 11th August 2022 | | |
| **ISSN:** | ISBN: 9781450397346 | | |
|  |  | | |
| **DOI:** | 10.1145/3542954.3542970 | | |
| **URL:** | https://doi.org/10.1145/3542954.3542970 | | |
| **Other Related Info.:** | Paper ID-54, pp.103-107 | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| This paper proposes a hybrid technique of Polarization Division Multiplexing and Wavelength Division Multiplexing with NRZ modulation. This design consists of 16 wavelengths with 32 individual dual-polarized channels having 100 GHz channel spacing up to 100 km transmission distance in a single-mode fiber. Each carried a 20 Gbit/s bit rate per channel and achieved 0.64 Tbit/s (16 wavelenghts×2 polarization state×20 Gbit/s), a net data rate with 21% spectral efficiency. The stability analysis of this technique was conducted by undertaking an FEC limit (Min Log BER= -3) calculation to get the minimum allowable OSNR (25.3 dB) in the transmission link. | |