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(54) Title of the invention : NOVEL BRAIN COMPUTER INTERFACE (BCI) SYSTEM ASSISTED WITH LI-FI FOR INTERPRETATION OF NEUROCHEMICAL SIGNALS

(51) International classification	:A61B 050000, A61N 010500, A61P 250600, G06F 030100, H04B 101160	(71)**Name of Applicant :** 1)**Dr. Kashish Parwani** Address of Applicant :Associate Professor, JECRC College, Jaipur, B-90, Basant Bahar Colony, Gopalpura, Mode Jaipur, Rajasthan Jaipur ------------------- **Name of Applicant : NA** **Address of Applicant : NA** (72)**Name of Inventor :** 1)**Dr. Kashish Parwani** Address of Applicant :Associate Professor, JECRC College, Jaipur, B-90, Basant Bahar Colony, Gopalpura, Mode Jaipur, Rajasthan Jaipur ----------- ----------- 2)**Dr. Renu Bist** Address of Applicant :Associate Professor, Department of Zoology, Centre of Advanced Studies, University of Rajasthan, JLN Marg, Jaipur 302004 Rajasthan, India Jaipur ----------- ----------- 3)**Dr. Vandna Rani Verma** Address of Applicant :Assistant Professor, Shardha University, Greater Noida,E293 gamma-1, Greater Noida Greater Noida ------------ ------------- 4)**Mr.Sandeep Das** Address of Applicant :Associate consultant at Infosys, Near janta chaki pratap colony ward no. 3 , chanderiya chittorgarh,312021 Rajasthan Chhittorgarh ----------- -----------
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(57) Abstract :
The present invention relates to a novel Brain Computer Interface (BCI) system (100) assisted with Li-Fi for interpretation of neurochemical signals. The system comprises a Brain Signal Unit (10), which includes an electroencephalogram (EEG) unit (11) , an ECoG (Electrocorticography) unit (12), a signal acquisition and processing unit, a (13) nd a light communication unit (14) for processing and communicating the acquired brain signals using Li-Fi technology. The system also includes a Demodulator Unit (20) for receiving and demodulating the light signal, and a Brain Processing Unit (30) that employs a machine learning algorithm to process the demodulated signal, detect mental status and mental diseases of the subject, and communicate the processed signal to external devices (40) for further observation or processing. The invention provides a non-invasive, efficient, and secure BCI system for interpreting neurochemical signals and offers improved data transmission speed, security, and reduced susceptibility to noise or interference..

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