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(51) International classification	:G01N0021330000, G06N0020000000, H01L0021660000, H04L0067100000, G06N0020200000	(71) <b>Name of Applicant :</b> <b>1)Chitkara University</b> Address of Applicant :Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Rajpura Punjab India <b>2)Chitkara Innovation Incubator Foundation</b>
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(57) Abstract :

A system for optimizing wastewater treatment, comprises of a plurality of sensors are used for continuous monitoring wastewater to detect type of waste contamination, a signal analysis module for conducting ultraviolet-visible (UV-VIS) spectroscopy of the wastewater, the signal analysis module for conducting UV-VIS spectroscopy employs Fourier transform analysis to generate spectral data enabling detection of organic and inorganic compounds in the wastewater to be treated, a predictive analytics module for determining of the treatment dosage and energy needed for treating the wastewater, self-learning cloud based architecture for real time adaptability of treatment procedure, the self-learning cloud based architecture is implemented through an online learning framework allowing embedded artificial intelligence (AI) protocols to refine treatment operations continuously using new operational data from the predictive analysis module in real time.

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