Antifungal Activity of Artemisia Nilagirica Essential Oil from the Western Ghats Nilgiris against Food Borne Fungi

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Abstract

Commercial antifungal drugs lead to develop fungal resistance and cause their

own side effects to humans. Alternative use of plant essential oil as antifungal

agent was attempted. The present study revealed that the extracted essential

oil from Artemisia nilagirica was assessed for its chemical constituents and

antifungal activity against four food borne fungi. Forty compounds were present

in the essential oil out of which thujone was the major compound followed by

γ-curcimene, α-caryophyllene, lavundulol and germacrene. Minimum inhibitory

concentration for Aspergillus flavus, Aspergillus niger, Fusarium oxysporum and

Penicillium notatum was 57.33, 32.66, 87.66 and 13.66 µl/L air respectively.

Results obtained showed that the Essential oil has more potency against P.

notatum followed by other fungal species at a slightly higher concentration localization and exciton generation rate distribution happened to be available in such nanostructures and influence in exciton generation in perovskite absorbing materials deposited atop in tandem configuration. Figure as shown below depicts the evidence of Si-NPys of Si-NWs growth using Si wafer as initial materials. It is noteworthy to mention that the dimension of such silicon nanostructures depends on experimental conditions such as temperature, precursor concentration, etching time etc.FDTD simulation suggested confined exciton generation rate distribution in such nanometric structures and thus active absorbing material such as perovskite would get enormous influence thereof.Authors acknowledge CoRERE, RI, KFUPM, Dhahran 31261, Saudi Arabia. MKH acknowledges Deanship of Scientific Research (DSR) at King Fahd University of Petroleum & Minerals (KFUPM) for funding this work through project No. IN151003.

Biography:

Dr. Mohammad Kamal Hossain is a recipient of K.A.CARE (King Abdullah City of Atomic and Renewable Energy) Research Fellowship and has been working in Center of Research Excellence in Renewable Energy (CoRERE), King Fahd University of Petroleum and Minerals (KFUPM), Kingdom of Saudi Arabia since 2010. Dr. Hossain completed his D. Engg. at Tsukuba University, Tsukuba, Japan (in collaboration with National Institute for Materials Science, NIMS) in 2007, Masters in Microelectronics (School of Advanced Technology) at Asian Institute of Technology (AIT), Bangkok, Thailand in 2003. The area of specialization includes, but not limited to, optoelectronics and nanoplasmonics using nanoscale materials in multidimensional features suitable for solar cell, sensor, catalyst, hydrogen production, etc. Dr. Hossain possesses 15+ patents and 110+ research articles in the field of nanoplasmonics and nanostructured materials along with a book and several book chapters. Dr. Hossain has been employed and collaborated with many international and highly reputed groups in Japan.