Full Name: Swathi Srinivasan

Email ID: swasri1996@gmail.com

Research areas: Water splitting application

Title of the research: Development of hydrogen production from salt water

Research Gate: https://www.researchgate.net/profile/Swathi-Srinivasan-2

Google scholar: https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=Ux9X-1UAAAAJ

Current position: Ph. D student

Description of current and past research

Water splitting is one of the most popular methods to produce hydrogen and oxygen gas, and it is one of the risen methods for overcoming energy shortage.

Recently, the main challenge is to prepare the efficient materials at a low cost, earth-abundant, high durability, and catalytic activity for water splitting applications. Recently, metal oxides have been greatly used as water splitting reactions, because it has consists the excellent properties. Particularly, metal tungstates with scheelite type structure have accredited much attention due to their attractive features. It has been employed in different applications such as electrochemical cells, microwave dielectrics, optoelectronic devices, etc. Among various tungstate materials, Strontium and calcium tungstate materials have mostly great deal of different application because of their electrical-optical and structural properties. In addition, transition metal doping elements including Ni, Co, Mn, Fe etc have provides the excellent approach to develop

the HER activity because it was found to boost the electron occupied states and promoting the charge transfer etc. Based on the literature survey my research work is focused on prepared the novel electrodes for H_2 and O_2 production which enhances the performances for EC water splitting.

Journal publications:

1. **Swathi, S.,** Yuvakkumar, R., Ravi, G., Hong, S.I., Velauthapillai, D., Thambidurai, M., Dang, C., Al-Mohaimeed, A.M. and Al-onazi, W.A., 2021. CuS@ β-SnS nanocomposite electrocatalysts for efficient electrochemical water oxidation. International Journal of Hydrogen Energy, 46(5), pp.3387-3400.
2. **Swathi, S.,** Babu, E.S., Yuvakkumar, R., Ravi, G., Pannipara, M., Al-Sehemi, A.G. and Velauthapillai, D., 2021. Growth of ZnSe x O1–x Nanorods and Their Photoelectrochemical Properties. Energy & Fuels, 35(7), pp.6289-6297.
3. **Swathi, S.,** Yuvakkumar, R., Ravi, G., Babu, E.S., Velauthapillai, D., Syed, A. and Dawoud, T., 2020. Silver-doped cadmium sulfide for electrochemical water oxidation. Applied Nanoscience, 10(11), pp.4351-4358.
4. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G. and Velauthapillai, D., 2021. Annealing temperature effect on cobalt ferrite nanoparticles for photocatalytic degradation. Chemosphere, 281, p.130903.
5. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G., Nanthini, D. and Velauthapillai, D., 2022. Flower like strontium molybdate for efficient energy conversion applications. Fuel, 308, p.122051.
6. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G. and Velauthapillai, D., 2021. Hexamethylenetetramine concentration effect on CaWO4 for electrochemical hydrogen evolution reaction activity. Fuel, 306, p.121781.
7. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G. and Velauthapillai, D., 2021. Hydrothermally synthesized α-MnS nanostructures for electrochemical water oxidation and photocatalytic hydrogen production. Fuel, 303, p.121293.
8. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G., Velauthapillai, D. and Vo, D.V.N., 2021. Ethylene glycol assisted MnCO3 electrocatalyst for water oxidation and hydrogen production application. Fuel, 302, p.121151.
9. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G. and Velauthapillai, D., 2021. Investigation of electrochemical performance of an efficient Ti2O3–CeO2 nanocomposite for enhanced pollution-free energy conversion applications. Journal of Environmental Management, 295, p.113138.

10. **Swathi, S.,** Yuvakkumar, R., Senthilkumar, P., Ravi, G. and Velauthapillai, D., 2021. Surfactant-assisted tungsten sulfide mesoporous sphere for hydrogen production. International Journal of Hydrogen Energy.
11. **Swathi, S.,** Yuvakkumar, R., Kumar, P.S., Ravi, G., Manigandan, A. and Velauthapillai, D., 2022. Scheelite-type Fe substituted SrWO4 for hydrogen evolution reaction under alkaline conditions. Fuel, 316, p.123309.