2.20 pm - 2.40 pm	Electropolymerization of EDOT (3,4-Ethylenedioxythiophene) with Berberine isolated from *Coscinium fenestratum*	R M G Rajapakse, M G S A M E W D D K Egodawele, J M Susanthi Jayasinghe, V N Seneviratne, Sajith Vijayan, Davita L Watkins, H M N P Gunarathna, A U Malikaramage, W H M R N K Herath, Shane Wylie, P G P R Abewardana, V M Y S U Bandara, W V N S Bowaththa	2023_02
2.40 pm - 3. 00 pm	Study of photocatalytic degradation of some selected Dyes and other organic contaminants in water	U S K Weliwegamage, S S A Fernando, G W C S Perera, B D H Kamalapriya	2023_25
3.00 pm - 3.20 pm	Computational studies on flabelliferins and their bioactivities	N. K. T. Manchanayake, Afnan M. Jaufer, A. A. P. Keerthi	2023_01

Abstracts of Research Papers to be presented at the 52nd Annual Sessions 2023

Abstract No: 2023_3

Formulation of natural soap with reduced free alkali content and enhanced antimicrobial properties

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Usage of synthetic chemical compounds in skin care products leads to severe health issues and undesirable side effects. Many plants have been used in the formulation of various kinds of skincare products. Here the bathing soap was formulated by incorporating virgin coconut (*Cocus nucifera*) oil, sodium hydroxide (NaOH), rock salt, soapberry (*Sapindus mukorossi*) drupes, Palmyrah (*Borassus flabellifer*) fruit pulp extract, Aloe, Hibiscus and Ixora plant extracts. The predominant aim of this study was to reduce the free alkali content in the soap, as the free alkali present in soap disrupts the lipid lamellae of the epidermis and results in irritation, dryness and skin related problems. Here four different soaps were formulated by replacing one-third of the required amount of NaOH with rock salt. Soap which was formulated by replacing 1/3 NaOH with rock salt shows ten times lesser free alkali content (0.009 % w/w) than the formulation containing no rock salt (0.08 % w/w). The formulated soap was evaluated for its physico- chemical properties (pH, free alkali content, moisture content, Total Fatty Matter (TFM), foamability) and anti-microbial activity and compared with Sri Lanka Standard (SLS) requirements for soap as mentioned in SLS 1220:2016. All four soaps comply with the SLS requirements for the soap. Here the pH range of the soap is 9.01(± 0.006) to 9.30(± 0.006). Its TFM is 43.20 % (± 0.157%) to 57.23% (±0.00%). It possesses greater foamability due to the presence of saponins in soapnut. The lather volume of the soap ranges between 200mL (±5.00) to 350mL (±0.00). The Inhibition zone diameter against *Staphylococcus aureus* lies between 15mm (±0.288 mm) to 18mm (±0.300 mm). The soap which is formulated here exhibits less free alkali content and possesses antimicrobial potential. The soap that contains Ixora extract was chosen as the best as it possessed significantly greater antimicrobial activity as expressed by the zones of inhibition against *S.aureus* and *E.coli* than the other soaps.

Key words:

Bathing soap, Rock salt, Antimicrobial, Free alkali content, Palmyrah fruit pulp