Faculty of Applied Sciences
Sabaragamuwa University of Sri Lanka

Out of the Press

Our publications - December

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Peer-reviewed Journal Articles

DNR

Global consortium for the classification of fungi and fungus-like taxa

Hyde KD, Abdel-Wahab MA, Abdollahzadeh J, Abeywickrama PD, Absalan S. et al.

Abstract

The Global Consortium for the Classification of Fungi and fungus-like taxa is an international initiative of more than 550 mycologists to develop an electronic structure for the classification of these organisms. The members of the Consortium originate from 55 countries/regions worldwide, from a wide range of disciplines, and include senior, mid-career and early-career mycologists and plant pathologists. The Consortium will publish a biannual update of the *Outline of Fungi and funguslike taxa*, to act as an international scheme for other scientists. Notes on all newly published taxa at or above the level of species will be prepared and published online on the *Outline of Fungi* website (https://www.outlineoffungi.org/), and these will be finally published in the biannual edition of the *Outline of Fungi and fungus-like taxa*. Comments on recent important taxonomic opinions on controversial topics will be included in the biannual outline. For example, 'to promote a more stable taxonomy in *Fusarium* given the divergences over its generic delimitation', or 'are there too many genera in the *Boletales*?' and even more importantly, 'what should be done with the tremendously diverse 'dark fungal taxa?' There are undeniable differences in mycologists' perceptions and opinions regarding species classification as well as the establishment of new species. Given the pluralistic nature of fungal taxonomy and its implications for species concepts and the nature of species, this consortium aims to provide a platform to better refine and stabilise fungal classification, taking into consideration views from different parties. In the future, a confidential voting system will be set up to gauge the opinions of all mycologists in the Consortium on important topics. The results of such surveys will be presented to the International Commission on the Taxonomy of Fungi (ICTF) and the Nomenclature Committee for Fungi (NCF) with opinions and percentages of votes for and against. Criticisms based on scientific evidence with regards to nomenclature, classifications, and taxonomic concepts will be welcomed, and any recommendations on specific taxonomic issues will also be encouraged; however, we will encourage professionally and ethically responsible criticisms of others' work. This biannual ongoing project will provide an outlet for advances in various topics of fungal classification, nomenclature, and taxonomic concepts and lead to a community-agreed classification scheme for the fungi and fungus-like taxa. Interested parties should contact the lead author if they would like to be involved in future outlines.

About the Journal

Mycosphere

Impact Factor – 16.525

Doi 10.5943/mycosphere/14/1/23

Our Scholar

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DPST

A Rigid Multiple Resonance Thermally Activated Delayed Fluorescence Core Toward Stable Electroluminescence and Lasing

Xun Tang, Mingchen Xie, Zesen Lin, Kirill Mitrofanov, Tuul Tsagaantsooj, Yi-Ting Lee, Ryota Kabe, Atula S. D. Sandanayaka, Toshinori Matsushima, Takuji Hatakeyama, and Chihaya Adachi

Abstract

The investigation of organic light-emitting diodes (OLEDs) and organic laser devices with thermally activated delayed fluorescence (TADF) molecules is emerging due to the potential of harnessing triplets. In this work, a boron/ nitrogen multiple-resonance TADF polycyclic framework fusing carbazole units (CzBNPh) was proposed. CzBNPh exhibited a narrowband emission (<30 nm), a unity photoluminescence quantum yield, and a fast radiative rate. Consequently, CzBNPh demonstrated a low distributed feedback (DFB) lasing threshold of 0.68 μJ cm^2. Furthermore, the stimulated emission zone of CzBNPh was effectively separated from its singlet and triplet absorption, thereby minimizing the singlet-triplet annihilation under long-pulsed excitation ranging from 20 μs to 2.5 ms. Significantly, the enhanced rigid molecular conformation, thermal stability, and photo-stability resulted in improved lasing and electroluminescence stability compared to that of 5,9-diphenyl-5,9-diaza-13b-boranaphtho[3,2,1-de]anthracene (DABNA)-core. These findings indicate the potential of CzBN-core as a promising framework for achieving long-pulsed wave and electrically-pumped lasing in the future.

About the Journal

Angewandte Chemie International Edition

Impact Factor – 16.6

doi.org/10.1002/anie.20231521

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DSSPE

Effects of Glass Ceiling Factors on Career Development among Women Athletes in Sri Lanka's National Teams

Pathum Priyamal Weerakkody, Issadee Kutintara, Sid Terason

Abstract

Background. Women and gender issues have become leading topics of concern around the world, and most explore women's challenges and advancement in all aspects of life. Objectives. To identify the effects of Glass Ceiling (GC) factors on Career Development (CD) among women athletes in Sri Lanka's national teams. Methods. One hundred five respondents were randomly selected using simple random sampling among 144 individuals who were eligible for this study, and a self-administered questionnaire was used to record the answers GC effects were taken as independent variables and Women Career Development (WCD) was taken as the dependent variable. Results. All the independent variables portrayed a statistically significant association with the dependent variable. Even though a negative association was hypothesized between all these regress and the CD, the only organization depicted a negative association with the dependent variable. Furthermore, the association among the independent variables was also statistically significant, and the most influential factor that affects WCD was organization while culture and individual were respectively given the impact on the dependent variable. The family was not significant while other independent factors were in the model. Moreover, independent variables remained unchanged even after controlling the effects of age and performance. Conclusion. Taken together, these results provide solid recommendations to women athletes on how GC factors affect CD in their professional life while addressing the invisible barriers that national women athletes faced during the development of their careers after retiring from sports.

About the Journal

Annals of Applied Sport Science

Impact Factor – 0.6

doi.org/10.61186/aassjournal.1186

Our Scholar

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Conference Proceedings

DNR

Diversity of Freshwater Fungi in Anuradhapura District, Sri Lanka

S.D.M.K. Wimalasena, D.Q. Dai , N.N. Wijayawardene, R.G.U. Jayalal, A.N. Ediriweera

Abstract

Sri Lanka is a biodiversity rich country. Given the vast array of plant species in Sri Lanka, it is reasonable to estimate that the country is home to approximately 34,000 fungal species, assuming a ratio of 1:9.8 plant to fungal species. Fungal diversity in aquatic ecosystems in Sri Lanka is still unknown. Hence, this study aims to document the fungal diversity of freshwater habitats in the Anuradhapura district, Sri Lanka. Accordingly, submerged decaying leaves, wood, and other organic materials were collected from Mihintale tank, Nachchaduwa tank, Mahakandarawa tank, small Kaludiya pond, and from seasonal tanks in the Mihintale area. Obtained samples were taken to the laboratory and single spore isolation and direct transfer of mycelia were used to isolate fungi. Consequently, out of a total collection of 50 submerged decaying samples, we successfully isolated 30 fungal strains. Nine strains were selected (based on their culture characters) since they were frequently occurring, they were identified using both macro and micro-morphological characters and ITS sequence data. Among them, *Aureobasidium melanogenum, Coniochaeta velutina,* and *Trichoderma harzianum* were recognized as freshwater fungi. The other identified fungi including *Hypoxylon lenormandii, Lasiodiplodia crassispora, L. pseudotheobromae, Neurospora crassa, Rhytidhysteron neorufulum, and T. lentiforme*, were previously reported as terrestrial fungi. These fungal species are preserved as living cultures at the culture collection of Rajarata University of Sri Lanka. This study contributes to the documentation of Sri Lanka's freshwater fungal diversity, providing insights into the country's rich biodiversity and highlighting the need for further conservation efforts to protect these valuable resources.

About the Conference

1st International Conference on Technological Research and Innovation 2023

27 September 2023

Faculty of Technology, Eastern University, Sri Lanka

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DNR

Species richness and activities of bird communities against different climatic variables along a 1 km elevational gradient in the Issengard Biosphere Reserve, a submontane forest in Belihuloya, Sri Lanka

A.S. Adikari , S.J. Perera , and S.S. Seneviratne

Abstract

Climatic conditions play a major role in changing the species' distribution. Climatic conditions could also change along an elevational gradient. Here, we investigated the bird community variation in response to the climatic conditions along an elevational gradient of one kilometre in the submontane zone of Sri Lanka. The bird community was studied in the Issengard Biosphere Reserve, a submontane forest at Belihuloya, in Ratnapura District, of the Sabaragamuwa Province (6°42'50.93"N, 80°45'6.39"E). Data collection was done along a 480 m to 1420 m (above Mean Sea Level) gradient, from August 2022 to April 2023 from 5:45 am –10:30 am in the morning and 3:00 pm– 6:30 pm in the afternoon. Bird identification, counting, and measuring climatic parameters were conducted each month. Temperature, wind speed, relative humidity, light intensity, cloud cover, and visibility were measured as climatic parameters utilizing the Sper Scientific 800015 large display indoor/outdoor thermometer, VA- 8020 digital anemometer, Sper Scientific 800015 humidity monitor, 1333 Metravi digital lux meter, 8 cm x 6 cm square shaped mirror, and a visibility chart with three-digit numbering system, respectively. Pearson and Spearman correlation tests were done, and graphs were plotted in R statistical platform. Visibility, relative humidity, wind speed, light intensity, temperature, and cloud cover significantly correlated with species richness with respective P values of 0.04, 0.007, 0.03, 0.002, 0.036 and, 0.003. Visibility and relative humidity are positively correlated, whilst wind speed, light intensity, and cloud cover correlated negatively with species richness. The species richness was higher at around 25°C, above 75% relative humidity, wind speed of 1.5 ms^{-1} or below, light intensity of 25 kLux or below, at 90-100% visibility, and below 50% cloud cover. Bird activity was higher at moderate temperatures.

About the Conference

SLAAS Scientific Session 2023

79th Annual Scientific Sessions 2023 - Part I

10 - 14 December 2023

Open University of Sri Lanka

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List of Conferences and Links - 2023

No	Name	Dates	Website Link	Abstract Book Link
1	International Conference on Applied Sciences Sabaragamuwa University of Sri Lanka	30th & 31st May 2023	https://www.sab.ac.lk/app/icaps/	https://www.sab.ac.lk/app/icaps/abstract.php
2	2nd Applied Sciences Undergraduate Research Symposium 2023	31st May 2023	https://www.sab.ac.lk/app/apsurs/	https://www.sab.ac.lk/app/apsurs/abstract.php
3	International Conference on Applied Sports 2023	18th & 19th October 2023	https://www.sab.ac.lk/app/icas/	https://drive.google.com/file/d/1PlZE2_pKSOo12ewpARdLIIRI3PJK6ZHd/view?fbclid=IwAR1r2uudYjQhsS2pirsaTel_h4MpqYmxV146WVzRyLiXIbMNnrX7FaFKdnk
4	9th International Conference of Sabaragamuwa University of Sri Lanka	6th - 8th December 2023	https://www.icsusl.sab.ac.lk/	https://www.icsusl.sab.ac.lk/ICSUSL_2023_Book_of_Abstracts.pdf
5	13th Annual Research Session 2023	13th December 2023	https://www.ars.sab.ac.lk/	https://drive.google.com/file/d/1VsM9maf4uU3GjqR3ktMa_R5d8tU3lqPn/view?usp=sharing