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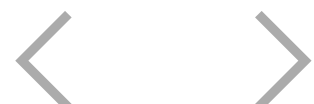
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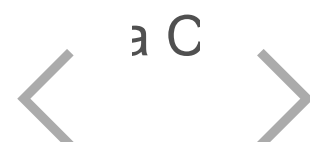
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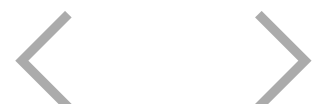
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Farmers' knowledge, perception, and use of phosphorus fertilization



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**Modification and characterization of ricken eggshell for pos
analytic applications**



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Bioactive compounds, phenolic profile, antioxidant capacity and effectiveness against lipid peroxidation of cell membranes of *Mauritia flexuosa* L. fruit extracts from three biomes in the Ecuadorian Amazon

Reinier Abreu-Naranjo, Jonathan G. Paredes-Moreta, Genoveva Granda-Albuja, Gabriel Iturralde, Ana M. González-Paramás, José M. Alvarez-Suarez

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he impact of raw and differentlv
ried pineapple (*Ananas* < 'os >

fortification on the vitamins, organic acid and carotene profile of dairy rasgulla (sweetened cheese ball)

Tanmay Sarkar, Molla Salauddin, Sudipta Kumar Hazra, Runu Chakraborty

e05233

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Species diversity and distribution of *Anopheles* mosquitoes in Bure district, Northwestern Ethiopia

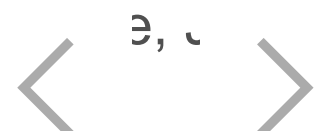
Tilahun Adugna, Emana Getu, Delenasaw Yewhalaw

e05063

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Preparation of charcoal briquette from palm kernel shells: case study in Ghana

 Atty Osei Bonsu, Mohammed Antey



e05266

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Prediction of grass biomass from satellite imagery in Somali regional state, eastern Ethiopia

Derege Tsegaye Meshesha, Muhyadin Mohammed Ahmed, Dahir Yosuf Abdi, Nigussie Haregeweyn

e05272

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Performance assessment of a solar powered hydrogen production system and its ANFIS model

S. Senthilraja, R. Gangadevi, Hasan Köten, R. Marimuthu

e05271

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Comparison of AlphaLISA and RIA assays for measurement of wool cortisol concentrations

T. Peric, A. Comin, M. Corazzin, M. Montillo, A. Prandi

e05230

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Gastroprotective activity of *Hypericum perforatum* extract in ethanol-induced gastric mucosal injury in Wistar rats: A possible involvement of H⁺/K⁺ ATPase α inhibition

Sargul H. Sofi, Sheila M. Nuraddin, Zahra A. Amin, Hazem A. Al-Bustany, Marwan Q. Nadir

e05249

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Belly flap from Norwegian spring-spawning herring (*Clupea harengus L.*): A potentially new product with high content of vitamin D, EPA and DHA

Margareth Kjerstad, Wenche Emblem Larssen, Lisa Kolden Midtbø
e05239

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Short-term impacts of soil nutrient management on maize (*Zea mays L.*) productivity and weed dynamics along a toposequence in Eastern Zimbabwe

Justin Chipomho, Joyful T. Rugare, Stanford Mabasa, Shamie Zingore, Arnold Bray Mashingaidze, Regis Chikowo
e05223



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Effects of commonly used food additives on haematological parameters of Wistar rats

Oluwabunmi Peace Femi-Oloye, Afolabi Owoloye, Adetola Mary Olatunji-Ojo, Adetoye Clement Abiodun, Bamidele Adewumi, Babatunde Oluwaseun Ibitoye, Femi Francis Oloye, Joshua Idowu Izegaegbe, Tobi Musa Adebayo, Ademola Joseph Adedoja, Oyindamola Precious Oginni, Francis Ayodeji Gbore, Felix Olusegun Akinwumi

e05221

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Survey of reasons why women utilize honey therapeutically, and reasons for not utilizing honey

Karsten Münstedt, Heidrun Männle, Thomas Riepen

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Nexus between light and culture media on morphogenesis in *Bacopa monnieri* and saponin yield thereof

Akanksha Aggarwal, Ashwani Mathur
e05245

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Variation of HLA class I (-A and -C) genes in individuals infected with hepatitis B or hepatitis C virus in Cameroon

Clauvis Kunkeng Yengo, Judith Torimiro, Mathurin Kowo, Patrick Awoumou Lebon, Barbara Atogho Tiedeu, Henry Luma, Oudou Njoya, Sarah Rowland-Jones, Louis-Marie Yindom
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Characterization of the acyl-ACP thioesterases from *Koelreuteria paniculata* reveals a new type of FatB thioesterase

R. Martins-Noguerol, C. DeAndrés-Gil, R. Garcés, J.J. Salas, E. Martínez-Force, A.J. Moreno-Pérez

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Interaction between goniotalamin and peroxisomal multifunctional enzyme type 2 triggering endoplasmic reticulum stress

Thanet Sophonnithiprasert, Ornjira Aruksakunwong, Etsu Tashiro, Yasumitsu Kondoh, Makoto Muroi, Hiroyuki Osada, Masaya Imoto, Ramida Watanapokasin

e05200



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Motion of dust ejected from the surface of asteroid (101955) Bennu

Yu Jiang, Jürgen Schmidt

e05275

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L^p bounds for rough parabolic maximal operators

Mohammed Ali, Qutaibeh Katatbeh

e05153

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Enforcement of legal remedies against construction projects time overrun in Ethiopia: A critical appraisal

Sintayehu D. Kebede, Tiewei Zhang

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-  Efficacy of *Kigelia africana* Lam. (Benth.) leaf and stem bark ethanolic extracts on adult cowpea seed beetle, [*Callosobruchus maculatus* Fabricius (Coleoptera: Chrysomelidae)] affecting stored cowpea seeds (*Vigna unguiculata*)

Olusola Michael Obembe, Durojaye Olanrewaju Ojo, Kayode David Ileke
e05215

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-  Ethanol-free antisolvent crystallization of glycine by liquefied dimethyl ether

Hideki Kanda, Tsubasa Katsube, Rintaro Hoshino, Mitsuhiro Kishino, Wahyudiono, Motonobu Goto
e05258

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Long-term memory of real-world episodes is independent of recency effects: magic tricks as ecological tasks

David Bestue, Luis M. Martínez, Alex Gomez-Marin, Miguel A. Gea, Jordi Camí

e05260

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Assessing the public perceptions of treated wastewater reuse: opportunities and implications for urban communities in developing countries

Victor E. Akpan, David O. Omole, Daniel E. Basse

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ombating homophobia
sbophobia, biphobia a



transphobia: A liberating and subversive educational alternative for desires

Fernando Barragán-Medero, David Pérez-Jorge

e05225

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Phylogenetic analysis and epidemiological history of Hepatitis E virus 3f and 3c in swine and wild boar, Italy

Alessandra Lo Presti, Roberto Bruni, Umbertina Villano, Cinzia Marcantonio, Michele Equestre, Massimo Ciuffetelli, Alessandro Grimaldi, Elisabetta Suffredini, Simona Di Pasquale, Dario De Medici, Anna Rita Ciccaglione

e05110

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The effects of storage and hop extract on aroma and flavour compounds in Balkan-style sausages packed under a CO₂-containing anaerobic atmosphere

Diego E. Carballo, Sonia Andrés, Francisco Javier Giráldez, Ali Khanjari, Irma Caro, Diego Llamazares, Sabina Operta, Javier Mateo
e05251

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Synthesis, density functional theory (DFT) studies and urease inhibition activity of chiral benzimidazoles

Hasil Aman, Naghmana Rashid, Zaman Ashraf, Aamna Bibi, Hsin-Tsung Chen, Nadaraj Sathishkumar
e05187

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Credit constraints and rural farmers' welfare in an agrarian economy

Amanullah, Ghulam Rasool Lakhan, Siraj Ahmed Channa, Habibullah Magsi, Mansoor Ahmed Koondher, Jing Wang, Naseer Ahmed Channa

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Prevalence and risk factors of COVID-19 suicidal behavior in Bangladeshi population: are healthcare professionals at greater risk?

Mohammed A. Mamun, Tahmina Akter, Fatematuz Zohra, Najmuj Sakib, A.K.M. Israfil Bhuiyan, Palash Chandra Banik, Mohammad Muhit

e05259



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Adaptation and destabilization of interpersonal relationships in sport and music during the Covid-19 lockdown

Roberta Antonini Philippe, Andrea Schiavio, Michele Biasutti

e05212

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AVPR1A main effect and OXTR-by-environment interplay in individual differences in depression level

A. Kazantseva, Yu. Davydova, R. Enikeeva, M. Lobaskova, R. Mustafin, S. Malykh, Z. Takhirova, E. Khusnutdinova

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A new multistage technique for approximate analytical solution of nonlinear differential eq



Saheed Ojo Akindeinde

e05188

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Critical assessment of Islamic endowment funds (Waqf) literature: lesson for government and future directions

Raditya Sukmana

e05074

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Financial inclusion, economic growth, and poverty alleviation: evidence from eastern Indonesia

Angga Erlando, Feri Dwi Riyanto, Someya Masakazu

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Isthmin 2 is decreased in preeclampsia and highly expressed in choriocarcinoma

Cynthia Martinez, Javier González-Ramírez, María E. Marín, Gustavo Martínez-Coronilla, Vanessa I. Meza-Reyna, Rafael Mora, Raul Díaz-Molina

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Activation of SIRT1/PGC 1 α /SIRT3 pathway by melatonin provides protection against mitochondrial dysfunction in isoproterenol induced myocardial injury

Shamreen Naaz, Sanatan Mishra, Palash K. Pal, Aindrila Chattopadhyay, Asish R. Das, Debasish Bandyopadhyay

e05159

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Fast, easy, cheap, robust and safe method of analysis of Sudan dyes in chilli pepper powder

Joseph Kweku Adjei, Vigil Ahormegah, Alex Kissi Boateng, Harry Kwaku Megbenu, Samuel Owusu

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Simulated gastrointestinal digestion of Brazilian açai seeds affects the content of flavan-3-ol derivatives, and their antioxidant and anti-inflammatory activities

Priscilla Siqueira Melo, Adna Prado Massarioli, Josy Goldoni Lazarini, Jackeline Cintra Soares, Marcelo Franchin, Pedro Luiz Rosalen, Severino Matias de Alencar

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Cassava production in Nigeria: trends, instability and decomposition analysis (1970–2018)

Edamisan Stephen Ikuemonisan, Taiwo Ejiola Mafimisebi, Igbekele Ajibefun, Kemisola Adenegan

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Therapeutic effect of TRC105 and decitabine combination in AML xenografts

June Baik, Martin Felices, Ashley Yingst, Charles P. Theuer, Michael R. Verneris, Jeffrey S. Miller, Rita Perlingeiro

e05242

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psychometric properties of the

Persian language perso



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climate questionnaire – Patient version (PCQ-P)

Faeze Kobrai-Abkenar, Parand
Pourghane, Fatemeh Jafarzadeh-
Kenarsari, Zahra Atrkar Roushan, David
Edvardsson

e05154

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Phosphate-solubilizing *Pseudomonas* sp., and *Serratia* sp., co-culture for *Allium cepa* L. growth promotion

Andrea Blanco-Vargas, Lina M. Rodríguez-
Gacha, Natalia Sánchez-Castro, Rafael
Garzón-Jaramillo, Lucas D. Pedroza-
Camacho, Raúl A. Poutou-Piñales, Claudia
M. Rivera-Hoyos, Lucía A. Díaz-Ariza, Aura
M. Pedroza-Rodríguez

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Application of biochar and inorganic phosphorus fertilizer influenced rhizosphere soil characteristics, nodule formation and phytoconstituents of cowpea grown on tropical soil

Christian Adler Phares, Kofi Atiah, Kwame Agyei Frimpong, Andrews Danquah, Aaron T. Asare, Samira Aggor-Woananu

e05255

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Characterization and reusability suggestions of the sludge generated from a synthetic acid mine drainage treatment using sodium ferrate (VI)

Alexis Munyengabe, Caliphs Zvinowanda, John Ngoni Zvimba, James amontja



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- Phytochemical screening and DPPH radical scavenging activity of three morphotypes of *Mauritia flexuosa* L.f. from Peru, and thermal stability of a milk-based beverage enriched with carotenoids from these fruits

Ivan Best, Sandra Casimiro-Gonzales, Alan Portugal, Luis Olivera-Montenegro, Luis Aguilar, Ana María Muñoz, Fernando Ramos-Escudero

e05209

- Accumulation of heavy metals and bacteriological indicators in spinach irrigated with further treated secondary wastewater



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In vitro screening of peptidase inhibitory activity in some plants of North India

Samiksha, Satwinder Kaur Sohal

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Statistical optimization of textile dye effluent adsorption by *Gracilaria edulis* using Plackett-Burman design and response surface methodology

R. Venkataraghavan, R. Thiruchelvi, D. Sharmila

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Development of a smartphone-based real time cost-effective VOC sensor

Tanmay Das, Mrityika Mohar

e05167

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Fruit provision from *Berberis microphylla* shrubs as ecosystem service in *Nothofagus* forest of Tierra del Fuego

Gimena Noemí Bustamante, Rosina Soler, Ana Paula Blazina, Miriam Elisabet Arena

e05206

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Anti-diabetic, diabetic neuropathy protective action and mechanism of action involving oxidativ



of chlorogenic acid isolated from *Selinum vaginatum* roots in rats

Nikita Saraswat, Neetu Sachan, Phool
Chandra

e05137

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- Potential of *Musa sapientum* Linn.
for digestive function promotion by
supporting *Lactobacillus* sp.

Patthanakorn Jaiturong, Nachtharinee
Laosirisathian, Busaban

Sirithunyalug, Sukum Eitssayeam, Sasithorn
Sirilun, Wantida Chaiyana, Jakkapan
Sirithunyalug

e05247

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- A comparison study between CFD
analysis and PIV technique for



velocity distribution over the Standard Ogee crested spillways

Rizgar Ahmed Karim, Jowhar Rasheed
Mohammed

e05165

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- Identification of differentially expressed *Legionella* genes during its intracellular growth in *Acanthamoeba*

Fu-Shi Quan, Hyun-Hee Kong, Hae-Ahm Lee, Ki-Back Chu, Eun-Kyung Moon

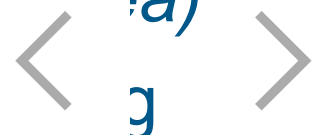
e05238

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- Effect of *Syzigium aromaticum* and *Allium sativum* spice extract powders on the lipid quality of



roundnuts (*Arachis hypogaea*)
adding during steam cooking



Hermann Arantes Kohole Foffe, Serge Cyrille Ndomou Houketchang, Fabrice Tonfack Djikeng, Gires Boungo Teboukeu, Apollinaire Tsopmo, Hilaire Macaire Womeni
e05166

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Application of structured triacylglycerols in food products for value addition

Snehal B. More, Parag R. Gogate, Jyotsna S. Waghmare
e05198

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Antagonistic interaction between central glucagon-like Peptide-1 and oxytocin on diet-induced obesity mice

Yonghoon Lee, Haneul Moon, Hwunii



Je, Yunkyeong Oh, Changyeon

Je Lee, Min Sun Kim, Cheryl



Yc



NamKoong, Hee Won Lee, Jung Hee
Kim, Hyung Jin Choi
e05190

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- Health information technology and hospital performance the role of health information quality in teaching hospitals**

Main Naser Alolayyan, Mohammad S.
Alyahya, Abdallah Hasan Alalawin, Aftab
Shoukat, Farid T. Nusairat

e05040

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- Effects of high hydrostatic pressure processing on structure and functional properties of biodegradable film**

Reyla Moreira Gonçalves, Daiane Aparecida
dalgo Chávez, Léa Mariza de
iveira, Claire Isabel Grígoli d



Sarantópoulos, Carlos Wanderley Piler de
Carvalho, Nathália Ramos de Melo, Amauri
Rosenthal

e05213

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The mediating effect of the
cyberchondria and anxiety
sensitivity in the association
between problematic internet use,
metacognition beliefs, and fear of
COVID-19 among Iranian online
population

Seyed Ghasem Seyed Hashemi, Shalaleh
Hosseinnezhad, Solmaz Dini, Mark D.

Griffiths, Chung-Ying Lin, Amir H. Pakpour

e05135

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BP1 increases transactivation of
omantic mutants of ESR



of XBP1 reverses endocrine resistance conferred by gain-of-function Y537S ESR1 mutation

David Barua, Benazir Abbasi, Ananya Gupta, Sanjeev Gupta

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Evaluation of clay soils from Manjacazi district (Mozambique) as potential raw material for the ceramic industry

Vicente Albino Manjate, Zaquir Issufo, Anastância Lucas Magenge

e05189

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Simulation of vorticity wind turbines

Paolo Sassi, Jorge Freiría, Mariana

endina, Martin Draper, Gabriel ... a

e05155



Response Surface Methodology optimization of chito-protein synthesized from crab shell in treatment of abattoir wastewater

Chinenye Faith Okey-Onyesolu, E.C.
Chukwuma, C.C. Okoye, O.D. Onukwuli
e05186

Wharton's jelly derived mesenchymal stem cells differentiate into oocyte like cells in vitro by follicular fluid and cumulus cells conditioned medium

Mona Zolfaghar, Leila Mirzaeian, Bahareh Beiki, Tahereh Naji, Ashraf Moini, Poopak Eftekhari-Yazdi, Vahid Akbarinejad, Andrea J. Varnengo, Rouhollah Fathi

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Polarimetric detection of maritime floating small target based on the Complex-valued Entropy Rate Bound Minimization

Hamzeh Ghahramani, Naser Parhizgar, Bijan Abbasi Arand, Morteza Barari

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COVID-19 and household energy implications: what are the main impacts on energy use?

Ali Cheshmehzangi

e05202

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Quality and microstructure of



freeze-dried yoghurt fortified with additives as protective agents



Elsayed A. Ismail, Ahmed A. Aly, Atallah A.

Atallah

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Differentiation of periapical granuloma from radicular cyst using cone beam computed tomography images texture analysis

Catharina Simioni De Rosa, Mariana Lobo Bergamini, Michelle Palmieri, Dmitry José de Santana Sarmiento, Marcia Oliveira de Carvalho, Ana Lúcia Franco Ricardo, Bengt Hasseus, Peter Jonasson, Paulo Henrique Braz-Silva, Andre Luiz Ferreira Costa

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An enhanced procedure for urban



mobile methane leak de

n



Tim Keyes, Gale Ridge, Martha Klein, Nathan Phillips, Robert Ackley, Yufeng Yang
e04876

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- Reaction rate law model and reaction mechanism covering effect of plasma role on the transesterification of triglyceride and methanol to biodiesel over a continuous flow hybrid catalytic-plasma reactor

P. Purwanto, Luqman Buchori, I. Istadi
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- COVID-19 lockdown: impact assessment on *Aedes* larval indices, breeding habitats, effects

 a vector control program for the prevention of dengue outbreaks [arXiv:2005.08811v1 \[cs.LG\]](#)

Appadurai Daniel Reegan, Munusamy Rajiv Gandhi, Antony Cruz Asharaja, Chitra Devi, Shanmugam Perumal Shanthakumar
e05181

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Analysis of pathological and clinical characteristics of cervical conization according to age group in Japan

Isao Murakami, Akiko Ohno, Masae Ikeda, Hiroshi Yamashita, Mikio Mikami, Yoichi Kobayashi, Satoru Nagase, Masatoshi Yokoyama, Takayuki Enomoto, Hidetaka Katabuchi

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Effect of stimulation timing on testing voluntary muscle force generation



Antonio Madrid, Elena Madinabeitia-Mancebo, Verónica Robles-García, Marcelo Chouza-Insua, Javier Cudeiro, Pablo Arias
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Optimization of the photocatalytic degradation process of aromatic organic compounds applied to mangrove sediment

Marcio J. Silva, Sarah A.R. Soares, Ingrid D.F. Santos, Iuri M. Pepe, Leandro R. Teixeira, Lucas G. Pereira, Lucas B.A. Silva, Joil J. Celino

e05163

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Specification of initial Kalman recursions of symmetric nonlinear state-space model



. Tasi'u, H.G. Dikko, O.I. Shitt

)5152



Fu



- Response surface methodology: An effective optimization strategy for enhanced production of nitrile hydratase (NHase) by *Rhodococcus rhodochrous* (RS-6)

Ruchi Sahu, Anil Kumar

Meghavarnam, Savitha Janakiraman

e05111

- Long-term supplementation of dehydroepiandrosterone improved depressive-like behaviors by increasing BDNF expression in the hippocampus in ovariectomized rats

Siyang Wu, Mei Ye, Zhulin Li, Shizhong

J, Yisheng Zhang



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Three-dimensional aneurysm volume measurements show no correlation between coil packing density and recurrence

Bart Thaci, Miriam Nuño, Kunal Varshneya, Clayton H. Gerndt, Matthew Kercher, Brian C. Dahlin, Ben Waldau
e05170

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Reconstruction of necrotic submandibular salivary gland using mesenchymal stem cells

Shamsoulmolouk Najafi, Haleh Nosrati, Zahra Faraji, Abdolreza Mohamadnia, Sadegh Shirian, Seyed Mostafa Mortazavi, Naghmeh Bahrami
e05162



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Effect of air velocity, temperature, and relative humidity on drying kinetics of rubberwood

Malisa Chanpet, Nirattisai Rakmak, Nirundorn Matan, Chairat Siripatana

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Antifungal activity and toxicity studies of flavanones isolated from *Tessaria dodoneifolia* aerial parts

José R. Soberón, Melina A. Sgariglia, José A. Carabajal Torrez, Franco A. Aguilar, Edgardo J.I. Pero, Diego A. Sampietro, Julia Fernández de Luco, Guillermo R. Labadie

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Effect of age and of reproductive status on reproductive indices in



horse mares carrying mule pregnancies

A. Carluccio, R. Bucci, J. Fusi, D. Robbe, M.C. Veronesi

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Synthesis and potent antimicrobial activity of CoFe_2O_4 nanoparticles under visible light

Davood Gheidari, Morteza Mehrdad, Salomeh Maleki, Samanesadat Hosseini

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JCAD expression and localization in human blood endothelial cells

Manabu Shigeoka, Satomi Arimoto, Masayashi



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Neuronal transcription program induced in hippocampal cells cocultured with bone marrow derived mesenchymal cells

Saba Majeed, Aisha Aziz, Shabana Usman Simjee

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A whole-genome worldwide molecular epidemiology approach for contagious caprine pleuropneumonia

Etienne Loire, Abdoukarim Issa Ibrahim, Lucía Manso-Silván, Louis Lignereux, François Thiaucourt

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Preventive effect of pomegranate juice against chemically induced bladder cancer: An experimental study

Wael I. Mortada, Amira Awadalla, Sherry M. Khater, Nashwa M. Barakat, Sherif M. Husseiny, Ahmed A. Shokeir

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Antimicrobial activity, phytochemical characterization and gas chromatography-mass spectrometry analysis of *Aspilia pluriseta* Schweinf. extracts

Sospeter N. Njeru, Jackson M. Muema

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reparation, structural e
and biocidal applications



trimethyltin(IV) complexes derived from substituted carboxylic acids

Mehwish Mehmood, Imtiaz-ud Din, Ahmad Raheel, Ihsan-ul Haq, Muhammad Nawaz Tahir

e05156

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- Conformational & spectroscopic characterization, charge analysis and molecular docking profiles of chromone-3-carboxylic acid using a quantum hybrid computational method

K. Jayasheela, P.B.

Nagabalasubramanian, S. Periandy

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method to control terp
roduction from turpenti



catalysts mixing

Tirto Prakoso, Ilham Ardiyanto Putra, Lienda Handojo, Tatang Hernas Soerawidjaja, Haryo Pandu Winoto, Antonius Indarto

e04984

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Analysis and prediction of climate forecasts in Northern Morocco: application of multilevel linear mixed effects models using R software

Mohamed Beroho, Hamza Briak, Rachid El Halimi, Abdessalam Ouallali, Imane Boulahfa, Rachid Mrabet, Fassil Kebede, Khadija Aboumaria

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First record of natural infection by *ngiostrongylus cantonensis*



(Nematoda: Metastrongyloidea) in
Belocaulus willibaldoi and *Rattus*
norvegicus in an urban area of São
Paulo city, SP, Brazil

Dan Jessé Gonçalves da Mota, Leyva Cecilia
Vieira de Melo, Vera Lúcia Pereira-
Chioccola, Ricardo Gava, Pedro Luiz Silva
Pinto

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Prevalence of teenage pregnancy
and the associated contextual
correlates in Rwanda

Dieudonne Uwizeye, Ruben
Muhayiteto, Evelyne Kantarama, Simeon
Wiehler, Yusuf Murangwa

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The regulatory technology “RegTech” and money laundering prevention in Islamic and conventional banking industry

Meaad Turki, Allam Hamdan, Richard
Thomas Cummings, Adel Sarea, Magdalena
Karolak, Mohammad Anasweh

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- Hydrothermal extraction, a promising method for concentrating phenolic antioxidants from red osier dogwood (*Cornus stolonifer*) leaves and stems

Franklin B. Apea-Bah, Dagmara
Head, Robert Scales, Ron Bazylo, Trust Beta

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Evaluation of cellular safety and the chemical composition of the peanut (*Arachis hypogaea* L.) ethanolic extracts

Florencia Menis Candela, Walter Fabián Giordano, Patricia Liliana Quiroga, Franco Matías Escobar, Fernando Mañas, Dardo Andrés Roma, Mariana Larrauri, Laura Raquel Comini, Elio Andrés Soria, María Carola Sabini

e05119

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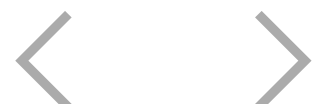
A SARS-CoV-2 host infection model network based on genomic human Transcription Factors (TFs) depletion

Massimiliano Chetta, Alessandra Rosati, Liberato Marzullo, Marina Tarsitano, Nenad Bukvic

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- Plant growth-promoting rhizobacteria (PGPR) improve the growth and nutrient use efficiency in maize (*Zea mays* L.) under water deficit conditions

S.I.A. Pereira, D. Abreu, H. Moreira, A. Vega, P.M.L. Castro
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- Air pollution and its impact on the concentration of airborne fungi in the megacity of São Paulo, Brazil

Dulcilena de Matos Castro e Silva, Rosa Maria Nascimento Marcusso, Cybelli Gonçalves Gregório Barbosa, Fábio Luiz Teixeira Gonçalves, Maria Regina Alves Cardoso

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A rationally designed orthogonal synthetase for genetically encoded fluorescent amino acids

Ximena Steinberg, Jason Galpin, Gibran Nasir, Romina V. Sepúlveda, Ernesto Ladron de Guevara, Fernando Gonzalez-Nilo, Leon D. Islas, Christopher A. Ahern, Sebastian E. Brauchi

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Influence of the preference for sons on contraceptive use in Bangladesh: A multivariate analysis

Mohammad Nazmul Hoq

e05120

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Application of per-residue energy decomposition to identify the set of amino acids critical for i



prediction of COX-2 inhibitory activity

Neha Chaudhary, Polamarasetty Aparoy

e04944

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- Investigation of interaction between boronic acids and sugar: effect of structural change of sugars on binding affinity using steady state and time resolved fluorescence spectroscopy and molecular docking

Raveendra Melavanki, Raviraj

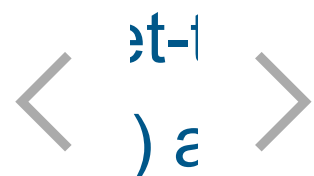
Kusanur, Kishor Kumar Sadasivuni, Diksha Singh, N.R. Patil

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linical significance of F
/hite Blood Cell Ratio (



National Institute of Health Stroke Scale (NIHSS) in acute ischemic stroke

Lisda Amalia, Nadjwa Zamalek Dalimonthe
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- Analysis of factors affecting energy consumption and CO₂ emissions in Thailand's road passenger transport

Piti Pita, Pornphimol Winyuchakrit, Bundit Limmeechokchai
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- Association of genetic polymorphism at tumor necrosis factor- α gene promoter - 1031T/C



and parasitic infections among children in Northern South Africa

N.C. Davhana, A.K. ElBakri, P.O. Bessong, A. Samie

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- Naphthalic anhydride decreases persistence of alachlor and atrazine and elevates tolerance of maize

Mamdouh M. Nemat Alla, Nemat M. Hassan

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- Simulation study for natural ventilation retrofitting techniques in educational classrooms – A case study

Abouib Nouh Ma'bdeh, Amani Al-ghoul, Tamer Alradaideh, Asnataineh, Saba Ahmad



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- Application of response surface methodology in optimizing the process conditions for the regeneration of used mobil oil using different kinds of acids

F.O. Ugwele, C.S. Aninwede, T.O. Chime, O.Asadu Christian, S.Ike Innocent

e05062

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- Determinants of glycaemic control among patients with type 2 diabetes: testing a process model based on self-determination theory

Cecilia Grønnegaard, Annemarie Varming, Timothy Skinner, Kasper esen, Ingrid Willaing



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- Effect of three LED lights on the biomass production and copper remediation by shoot cultures of *Musa paradisiaca*

Tjie Kok, Fenny Irawati

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- Synthesis, characterization, *in silico*, and *in vitro* biological screening of coordination compounds with 1,2,4-triazine based biocompatible ligands and selected 3d-metal ions

Rugmini Ammal P, Anupama R.

Prasad, Abraham Joseph

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The mediating role of procedural justice on the relationship between job analysis and employee performance in Jordan Industrial Estates

Mohamed Mahmoud Khtatbeh, Anuar Shah Bali Mahomed, Suhaimi bin Ab Rahman, Rosmah Mohamed

e04973

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Mode of delivery, order of birth, parental age gap and autism spectrum disorder among Malaysian children: A case-control study

Jo Ann Andoy Galvan, Prabhagari Nair Ramalingam, Sapna Shridhar Patil, Muhammad Aminul Syahmi bin

Sabri, Karuthan Chinna, Muhammad Sabri Shrir, Kumarappan Chidambaram



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- Poly-ion complex (PIC) formation of heparin and polyamines: PIC with tetrakis (3-aminopropyl) ammonium allows sustained release of heparin**

Daichi Ito, Dan Ge, Noriyuki Kogure, Hitomi Manaka, Yusuke Terui, Hiromitsu Takayama, Robert J. Linhardt, Toshihiko Toida, Kyohei Higashi

e05168

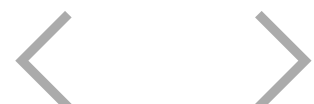
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- Screening for potential school shooters through the weight of evidence**

Yair Neuman, Yoav Lev-Ran, Eden Shalom Erez

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Machine learning glass transition temperature of polymers

Yun Zhang, Xiaojie Xu

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Efficient numerical technique for solution of delay Volterra-Fredholm integral equations using Haar wavelet

Rohul Amin, Kamal Shah, Muhammad Asif, Imran Khan

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Implementation of a full-scale constructed wetland to treat greywater from tourism in Suluban ' 'luwatu Beach, Bali, Indonesia



ayang Christy Perdana, Suw
adisusanto, Ignasius L.Setya



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Experimental design of a culture approach for corneal endothelial cells of New Zealand white rabbit

María Dolores Montalvo-Parra, Isaac Alejandro Vidal-Paredes, Cesar E. Calzada-Rodríguez, Italia Tatnaí Cárdenas-Rodríguez, Guiomar Farid Torres-Guerrero, Daniela Gómez-Elizondo, Mariana López-Martínez, Judith Zavala, Jorge E. Valdez-García

e05178

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Measuring the effectiveness of the Covenant of Mayors on the reporting of climate hazards by Municipalities



Ray Hernandez, Gustavo Na
arboza



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- Conformational analysis and quantum descriptors of two new imidazole derivatives by experimental, DFT, AIM, molecular docking studies and adsorption activity on graphene**

Veena S. Kumar, Y. Sheena Mary, Kiran Pradhan, Dhiraj Brahman, Y. Shyma Mary, Goncagül Serdaroğlu, Ali Shokuhi Rad, M.S. Roxy

e05182

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- Systematic analysis of the scientific literature on population surveillance**

Gregorio González-Alcaide, Pedro J. Orente, José-Manuel Ramos-Rincón



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Evaluation of clinicopathological abnormalities in sick cats naturally infected by *Leishmania infantum*

Manolis K. Chatzis, Panagiotis G. Xenoulis, Leonidas Leontides, Dimitrios Kasabalis, Mathios E. Mylonakis, Margarita Andreadou, John Ikonomopoulos, Manolis N. Saridomichelakis

e05177

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Total color change (ΔE^*) is a poor estimator of total carotenoids lost during post-harvest storage of biofortified maize grains

Smith G. Nkhata

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Anti-metastatic action of an N^4 -aryl substituted thiosemicarbazone on advanced triple negative breast cancer.

A.M. Sólmo, M.C. Soraires Santacruz, S. Vanzulli, O. Coggiola, E. Bal de Kier Joffé, L. Finkielsztejn, M.A. Callero

e05161

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Anti-tumor effects of *Artemisia nilagirica* extract on MDA-MB-231 breast cancer cells: deciphering the biochemical and biomechanical properties via TGF- β upregulation

Shilpa R. Raju, Sreenath Balakrishnan, Somanna Kollimada, K.N. Chandrashekara, Aruna Jampani

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Development and validation of QSPR models for corrosion inhibition of carbon steel by some pyridazine derivatives in acidic medium

El Hassan El Assiri, Majid Driouch, Jamila Lazrak, Zakariae Bensouda, Ali Elhaloui, Mouhcine Sfaira, Taoufiq Saffaj, Mustapha Taleb
e05067

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Sequential estimation of the generated curing heat of composite materials by data assimilation: A numerical study

Ryota Yokoyama, Ryosuke Matsuzaki, Tadahiro Kobara, Kentaro Takahashi

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Eye closed learning time by Japanese during an English examination

Hiroki Fujita, Kenji Sano, Katsunari Takeuchi, Toyoko Kikutani, Mako Azuma, Tadashi Tanaka

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News consumption patterns on Twitter: fragmentation study on the online news media network

Ford Lumban Gaol, Ardian Maulana, Tokuro Matsuo

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Gluten-free cookies with low glycemic index and glycemic load:

optimization of the process variables via response surface methodology



methodology and artificial neural network

Babatunde Olawoye, Saka O.

Gbadamosi, Israel O. Otemuyiwa, Charles T. Akanbi

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- Optimization of process variables for acetoin production in a bioreactor using Taguchi orthogonal array design

Abiola Ezekiel Taiwo, Tafirenyika Nyamayaro Madzimbamuto, Tunde Victor Ojumu

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- Emotional and Behavioural disorders in a cohort with Down syndrome using the Stre



Difficulties Questionnaire: A pilot study

Kavitha Sothirasan, A.J. Anand, Rashmi Mittal, Poh Choo Khoo, Suresh Chandran
e05095


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Effects of melatonin on uterine hypertrophy/hyperplasia: A preliminary experimental rat study

Mustafa Can Sivas, Omer Lutfi Tapisiz, Rasit Tan Ayik, Devrim Kahraman, Sadiman Kiykac Altinbas, Ozlem Moraloglu Tekin
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A computer system supporting agricultural machinery and farm tractor purchase decisions

 arol Durczak, Adam Ekielski, Paweł
Łęzłowski, Tomasz Żelaziński,  law
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Pilarski

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Expression profiles of the SARS-CoV-2 host invasion genes in nasopharyngeal and oropharyngeal swabs of COVID-19 patients

Francesca Amati, Chiara Vancheri, Andrea Latini, Vito Luigi Colona, Sandro Grelli, Maria Rosaria D'Apice, Emanuela Balestrieri, Chiara Passarelli, Antonella Minutolo, Sara Loddo, Andrea Di Lorenzo, Paola Rogliani, Massimo Andreoni, Giuseppe Novelli

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Population status of *Boswellia napyrifera* woodland and prioritizing



› conservation interver



multi-criteria decision model in northern Ethiopia

Tesfay Gidey, Daniel Hagos, Hagos Mohammedseid Juhar, Negasi Solomon, Aklilu Negussie, Josep Crous-Duran, Tânia Sofia Oliveira, Abrham Abiyu, Joao HN Palma

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Iron deficiency negatively regulates protein methylation via the downregulation of protein arginine methyltransferase

Hirofumi Inoue, Nobuaki Hanawa, Shin-Ichi Katsumata, Yumi Aizawa, Rie Katsumata-Tsuboi, Miori Tanaka, Nobuyuki Takahashi, Mariko Uehara

e05059

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Combination of Pancreastatin inhibitor PSTi8 with metformin inhibits Fetuin-A in type 2 diabetic mice

Pragati Singh, Richa Garg, Umesh K. Goand, Mohammed Riyazuddin, Mohammad Irshad Reza, Anees A. Syed, Anand P. Gupta, Athar Husain, Jiaur R. Gayen
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Animating inter-organisational resilience communication: A participatory social network analysis of water governance in the UK

S. Ward, F. Meng, S. Bunney, K. Diao, D. Butler
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Effect of starter nitrogen and phosphorus fertilizer rates on yield and yield components, grain protein content of groundnut (*Arachis Hypogaea* L.) and residual soil nitrogen content in a semiarid north Ethiopia

Kinfe Tekulu, Gebeyehu Taye, Dereje Assefa
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Examining the effect of land transfer on landlords' income in China: An application of the endogenous switching model

Thomas Bilalib Udimal, E Liu, Mingcan Luo, Ya Li

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Synthesis, spectral analysis,
molecular docking and DFT studies
of 3-(2, 6-dichlorophenyl)-
acrylamide and its dimer through
QTAIM approach

Akhilesh Kumar Shukla, Aniruddh Prasad
Chaudhary, Jyoti Pandey

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Investigating the potential clinical
utility of therapeutic techniques
based on eidetic imagery as
adapted by the Eidetic Model of
Growth (EMG) for people with
intellectual disability (ID)

Akhtar Ali Syed, Shazia Neelofur, Aidan
Moran, Gary O'Reilly

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Novel hybrid antiviral VTRRT-13V2.1 against SARS-CoV2 main protease: retro-combinatorial synthesis and molecular dynamics analysis

Vishvanath Tiwari

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Can accelerated transcranial direct current stimulation improve memory functions? An experimental, placebo-controlled study

Martin Bystad, Benedicte Storø, Nina Gundersen, Ida Larsen Wiik, Lene Nordvang, Ole Grønli, Ingrid Daae Rasmussen, Per M. Aslaksen

e05132



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Collagen-based scaffolds with infused anti-VEGF release system as potential cornea substitute for high-risk keratoplasty: A preliminary in vitro evaluation

Oleksiy Buznyk, Mohammad Azharuddin, Mohammad M. Islam, Per Fagerholm, Nataliya Pasyechnikova, Hirak K. Patra

e05105

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Study of impulsive problems under Mittag-Leffler power law

Mohammed S. Abdo, Thabet Abdeljawad, Kamal Shah, Fahd Jarad

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development of superhydrophilic
innic acid-crosslinked (< er >

oxide membranes for efficient treatment of oil contaminated water with enhanced stability

Akshay V. Singhal, Robin George, Anshul Kumar Sharma, Deepika Malwal, Indranil Lahiri

e05127

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The genetic relationships of Indian jujube (*Ziziphus mauritiana* Lam.) cultivars using SSR markers

Chu-Ying Chiou, Huei-Chuan Shih, Chi-Chu Tsai, Xiao-Lei Jin, Ya-Zhu Ko, Junaldo A. Mantiquilla, I-Szu Weng, Yu-Chung Chiang

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Down-regulation of COX-2 activity by $1\alpha,25(\text{OH})_2\text{D}_3$ is VDR dependent in endothelia



transformed by Kaposi's sarcoma-associated herpesvirus G protein-coupled receptor

Cinthya Tapia, Fernando Zamarreño, Gabriela Alejandra Salvador, Cecilia Irene Casali, Juan Viso, María del Carmen Fernandez, John H. White, Verónica González-Pardo
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Geometric morphometric analysis of Japanese female facial shape in relation to psychological impression space

Koyo Nakamura, Anri Ohta, Shoko Uesaki, Mariko Maeda, Hideaki Kawabata
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Association of DRD2 gene polymorphisms with schizophrenia in the young Bangladeshi population: A pilot study

Md. Saddam Hussain, Shafayet Ahmed Siddiqui, Susmita Mondal, Md. Shalahuddin Millat, Sadiatul Marzan, Md. Giash Uddin, Md. Abdul Aziz, Md. Faruq Alam, Mohammad Safiqul Islam

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Appropriate citation of placenta cell lines 3A(tPA-30-1) and 3A-sub E [post crisis of 3A(tPA-30-1)] in medical literature

Aiwa Ono, Paula Benny, Margaret Griffith, Christian Litton, Men-Jean Lee

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A simple Cu(II) complex of phenolic oxime: synthesis, crystal structure, supramolecular interactions, DFT calculation and catecholase activity study

Malay Dolai, Urmila Saha

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□ Scenarios for handling the impact of COVID-19 based on food supply network through regional food hubs under uncertainty

Tomy Perdana, Diah Chaerani, Audi

Luqmanul Hakim Achmad, Fernianda Rahayu Hermiatin

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pandemic in Indonesia

Hario Megatsari, Agung Dwi
Laksono, Mursyidul Ibad, Yeni Tri
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Nugraheni
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Computational assessment of MCM2 transcriptional expression and identification of the prognostic biomarker for human breast cancer

Abdus Samad, Farhana Haque, Zulkar
Nain, Rahat Alam, Md Abdullah Al
Noman, Mohammad Habibur Rahman
Molla, Md Saddam Hossen, Md Raquibul
Islam, Md Iqbal Khan, Foysal Ahammad
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Review article

- Infection control in dentistry during COVID – 19 pandemic: what has changed?

Mrudula Patel

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- Small, but smelly: the importance of *Solobacterium moorei* in halitosis and other human infections

Ibrahim Barrak, Anette Stájer, Márió Gajdács, Edit Urbán

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- Understanding domestic violence: masculinity, culture, traditions

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- Intensity threshold based solid tumour segmentation method for Positron Emission Tomography (PET) images: A review

Mahbubunnabi Tamal

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- A review on *Borreria verticillata*: A potential bionematicide, channeling its significant antimicrobial activity against root-knot nematodes

Nkechi B. Izuogu, Oluwatoyin E.

Bello, Oluwasesan M. Bello

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(Vigna subterranean): A review

Ebere Lovelyn Udeh, Monde A. Nyila, Sheku Alfred Kanu

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The use of plant extracts and their phytochemicals for control of toxigenic fungi and mycotoxins

Rhulani Makhuvele, Kayleen Naidu, Sefater Gbashi, Velaphi C. Thipe, Oluwafemi A. Adebo, Patrick B. Njobeh

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Lactic acid production – producing microorganisms and substrates sources-state of art

Elahe Abedi, Seyed Mohammad Bagher ashemi



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- Series solution of unsteady MHD oblique stagnation point flow of copper-water nanofluid flow towards Riga plate

Rizwana Rizwana, Azad hussain, S. Nadeem
e04689

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- Urban views and their impacts on citizens: A grounded theory study of Sanandaj city

Mehrdad Karimimoshaver, Mohammad Azad Ahmadi, Farshid Aram, Amir Mosavi
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- Ecology and evolution of migration the freshwater eels of *anguilla* Schrank, 1798

jer



Takaomi Arai

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Educational Robotics for children with neurodevelopmental disorders: A systematic review

Monica Pivetti, Silvia Di Battista, Francesca Agatolio, Brunilda Simaku, Michele Moro, Emanuele Menegatti

e05160

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Plastic wastes: environmental hazard and instrument for wealth creation in Nigeria

O. Kehinde, O.J. Ramonu, K.O. Babaremu, L.D. Justin

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Case report

Reversible brain imaging findings with a severe neurological prognosis of neuroleptic malignant syndrome

Kazunori Fukushima, Yuto Aramaki, Yumi Ichikawa, Yuta Isshiki, Yusuke Sawada, Jun Nakajima, Masahiko Kambe, Masato Murata, Makoto Aoki, Kiyohiro Oshima

e05374

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Long-term outcomes of two patients with progressive myoclonic epilepsy treated with vagus nerve stimulation therapy

Ayataka Fujimoto, Tohru Okanishi, Keishiro Sato, Hideo Enoki

e05324



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Minor stroke with bilateral acute infarctions and combined vascular anomalies: A complex case report

Fabrizio Giammello, Cristina Dell'Aera, Francesco Grillo, Masina Cotroneo, Carmela Casella, Paolino La Spina, Carmelo T. Currò, Mariano Velo, Francesca Granata, Antonio Toscano, Rosa F. Musolino, Maria C. Fazio
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COVID-19 pandemic against mental health services for genocide survivors during commemoration week in Rwanda

James Ngamije, Callixte Yadufashije
e05229

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Corrigendum

- Corrigendum to “Two protocols of aerobic exercise modulate the counter-regulatory axis of the renin-angiotensin system” [Heliyon 6 (1) (January 2020) e03208]

Daniel Massote Magalhaes, Albena Nunes-Silva, Guilherme Carvalho Rocha, Lucas Neves Vaz, Marcelo Henrique Salviano de Faria, Erica Leandro Marciano Vieira, Natalia Pessoa Rocha, Ana Cristina Simoes e Silva
e05256

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- Corrigendum to “Early pregnancy serum IGFBP-1 relates to lipid profile in overweight and obese women” [Heliyon 6 (8) (August 2020) Article e04788]



ati Mokkaala, Juuso Juhila, No
outtu, Timo Sorsa, Kirsi Laitir



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- Corrigendum to “Designing and evaluating an automated intravenous dosage medication calculation tool for reducing the time of stat medication administration in a pediatric emergency department” [Heliyon 6 (6) (June 2020) Article e04140]

Yara AlGoraini, Nevin Hakeem, Mohammad AlShatarat, Mohammed Abudawass, Amani Azizalrahman, Rafath Rehana, Donabel Laderas, Nina AlCazar, Ibrahim AlHarfi

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- Letter to the editor of Heliyon re: *De novo* congenital malformation frequencies in children from the Bryansk region following the Chernobyl disaster (2000–2017). Heliyon. 2020; 6(8): e04616

Alfred Körblein

e05184

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- Reply to: letter to the editor of Heliyon re *De novo* congenital malformation frequencies in children from the Bryansk region following the Chernobyl disaster (2000–2017). Heliyon. 2020;6(8):e04616

Anton Korsakov

- 75183



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Erratum

- Erratum to “Emergency Medical Services resource capacity and competency amid COVID-19 in the United States: preliminary findings from a national survey” [Heliyon 6 (5) (May 2020) Article e03900]

Cody Gibson, Christian Ventura, George Donald Collier

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Heliyon editors

Heliyon is actively building individual sections that are managed by respected researchers and experts in the field. These dedicated and experienced section editors and their teams of associate editors, supported by our in-house editorial team, are responsible for managing the peer review process for all submitted manuscripts within their subject sections. These dedicated sections allow us to tailor each author's experience to the needs and standards they have come to expect within their respective fields.

Heliyon has recently created a collection of [publications from our editorial board](#), which you may be interested in reading.

Agriculture

Meet the full editorial team for [Heliyon Agriculture](#).



Dr. Athanasios Damialis

Dr. Athanasios Damialis is a **multi**-disciplinary scientist working for more than 20 years on the fields of plant and fungal ecology, environmental sciences, biometeorology, climate change and environmental health. His particular focus lies on the reproductive biology of plants (flowering phenology, atmospheric circulation of airborne pollen) and on endophytic fungi. He uses an inter-disciplinary research approach with environment-environment interactions and human-environment interactions. This includes mainly those interactions including, but not limited to, the detection of bio-climatic indicators and spatiotemporal patterns of plant, forest and agricultural habitats and ecosystems, in relation to ongoing and simulated climate change. His research goal is to comprehend the responsive ability of organisms under stress conditions, ultimately, attempting to promote sustainable growth and environmental quality.

Arts and humanities

Meet the editorial team for [Heliyon Arts and humanities](#).

Biochemistry, molecular biology and cell biology

Meet the full editorial team for [Heliyon Biochemistry, molecular biology and cell biology](#).



Prof. Nicola Zambrano

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Nicola Zambrano is professor of Molecular Biology at the University of Naples Federico II, and group leader at CEINGE Advanced Biotechnologies, Naples, Italy. He holds a M.Sc. degree in biological sciences and a Ph.D. in biotechnologies, acquired within a joint doctoral program from the Universities of L'Aquila and Naples, Italy. He was a visiting fellow at National Cancer Institute, NIH in Bethesda from 1991 to 1994, and visiting scientist at EMBL in Heidelberg, Germany in 1997. His academic career at the Federico II University in Naples started with an assistant professor position in biochemistry (1996), before being enrolled as an associate professor (2002) and then, as a full professor in molecular biology (2010).

Microbiology
Neuroscience
Pharmaceutical science, pharmacology and toxicology
Physics
Psychology
Quantitative biology, biotechnology and bioengineering
Social science



Prof. Jinrong Min

Professor Jinrong Min received his Ph.D. degree in physics from the Institute of Physics, Chinese Academy of Sciences in China, and carried out his post-doctoral training in chromatin structural biology at the Cold Spring Harbor Laboratory, USA. He is currently the principal investigator of the Chromatin Structural Biology Group at the Structural Genomics Consortium (SGC), University of Toronto, and an associate professor in the Department of Physiology at the University of Toronto.

Biology

Meet the editorial team for [Heliyon Biology](#).

Business and economics

Meet the full editorial team for [Heliyon Business and economics](#).



Dr. Larisa Yarovaya

Doctor Larisa Yarovaya received her doctorate in finance from Northumbria University in England. Currently, she is a lecturer in finance, Programme Director BSc Finance, and deputy head of Centre for Digital Finance at the Southampton Business School, University of Southampton.

Dr. Yarovaya is a researcher the fields of international finance, digital finance, financial integration, Islamic finance, energy economics, information transmission, and international business. She has published her research in peer-reviewed academic journals and is an associate editor of the *International Review of Financial Analysis*, *Journal of International Financial Markets Institutions and Money*, *Heliyon*, and *Data-in-Brief*.



Assoc. Prof. Pavlos Delias

Pavlos Delias is a tenured faculty member at the [International Hellenic University](#), Department of Accounting and Finance. He holds a jointly supervised PhD from both [Technical University of Crete](#) and [University Paris Dauphine](#), under a cotutelle agreement.

Pavlos Delias has been invited as a visiting professor in several universities (national as well as international). He has contributed to numerous research projects, focusing on applying the principles of business analytics and operational research to decision support systems design and use. He is also a member of the coordination board for the EURO working group on decision support systems. His research interests are in the areas of business process analytics, business analytics and operational research, and **multiple** criteria analysis.

Cancer Research

Meet the full editorial team for [Heliyon Cancer Research](#).



Prof. Graham Pawelec

Graham Pawelec received an MA in Natural Sciences and a PhD in Transplantation Immunology from the University of Cambridge, UK. He is currently Professor of Experimental Immunology in the Department of Immunology, University of Tübingen, Tübingen, Germany. He is a Visiting Professor at Nottingham Trent University, UK and at King's College London, UK, holds an Honorary Chair at Manchester University, UK. He is a member of the Cancer Solutions Program at the Health Sciences North Research Institute of Canada, Sudbury, Ontario, Canada. He is currently Co-Editor-in-Chief of "Immunity and Aging". Graham's research interests are centred on alterations to immunity, especially T cell-mediated immunity, in ageing and cancer in man, and the influence these have on the outcome of vaccination and immunomodulatory antibody therapies. The impact of polypathogenicity (including multiple infections, cancer, Alzheimer's, diabetes, autoimmunity) as well as stress (psychological, nutritional) on immune signatures reflecting individual immune status is of particular interest in the clinical context.

Chemical Engineering

Meet the full editorial team for [Heliyon Chemical Engineering](#).



Prof. Bart Van der Bruggen

Bart Van der Bruggen received his PhD in chemical engineering from KU Leuven in 2000. He currently works as full professor at KU Leuven (Belgium) and extraordinary professor at Tshwane University of Technology (South Africa). He has vast experience as an editor for various journals and is also very active author and reviewer, with over 600 publications, cited more than 25,000 times. His expertise is in separation processes in classical and non-classical chemical engineering applications, with a focus on membrane science and technology.

Chemistry

Meet the full editorial team for [Heliyon Chemistry](#).



Dr. Francesco Epifano

Prof. Epifano obtained his degree in medicinal chemistry and pharmaceutical technology in 1993 from the University of Perugia, Italy. In 1998, he obtained his Ph.D. in agricultural entomology at the Faculty of Agricultural Sciences of the University of Perugia. Currently, he is an associate professor of medicinal chemistry at the Department of Pharmacy of the University Gabriele D'Annunzio of Chieti-Pescara. His recent work is concerned with synthesis and pharmacological properties of secondary metabolites from plants, fungi, and bacteria. Dr. Epifano was the recipient of the 2010 IADR / Glaxo Smith Kline Innovation in Oral Care Award as the co-investigator of the project entitled "Therapeutic potential of Citrus auraptene for periodontal disease", the 2012 Apivita Award for Phytochemistry, and the 2017 Pierre Fabre – Phytochemical Society of Europe Innovation Award.

Clinical research

Meet the full editorial team for [Heliyon Clinical research](#).



Dr. Carolyn Mackintosh-Franklin

Dr. Carolyn Mackintosh-Franklin has had an extensive career in both clinical practice and higher education working at the University of Bradford, University of Liverpool, University of Hull and currently working at the University of Manchester. She received her first degree from the University of Newcastle Upon Tyne, her MSc from the University of Manchester and doctorate from the University of Bradford. She is also a registered nurse specializing in the assessment and management of acute and chronic pain. Her research interests are broad ranging; encompassing work on health care professionals' attitudes towards those in pain, aspects of pain assessment and management, and pedagogic research into learning needs of mature students, with a range of highly cited publications and conference presentations in these areas.



Assoc. Prof. Giuseppe Musumeci

Giuseppe Musumeci received a BS, MS and PhD in Human Movement and Sport Sciences from the University of Catania, Italy. Currently, he works as a Professor of Sports Sciences at the Department of Biomedical and Biotechnological Sciences, School of Medicine, University of Catania, Italy. He is also an Adjunct Professor at the Temple University's College of Science and Technology, Philadelphia, USA and at the Faculty of Sport Sciences, Fujian Normal University, Fuzhou, China. Prof. Musumeci is the Director of the Research Center on Motor Activities (CRAM), the Director of School of Posturology and Physical Exercise Sciences, the Dean of the Human Movement Sciences Faculty and the Head of the Movement Innovation PosturaLab at the University of Catania. He is currently Editor-in-Chief of "Journal of Functional Morphology and Kinesiology". Musumeci's research interests are centered on morphological, molecular, biochemical and clinical aspects of osteoarthritis and musculoskeletal disorders and the relative effects of diet, ageing and physical activity. Other research topics of interest are tissue engineering and mechanobiology related to the musculoskeletal system in the clinical context.

Computer science

Meet the full editorial team for [Heliyon Computer science](#).



Assoc. Prof. Jonathan Chan

Assoc. Prof. Jonathan H. Chan is an associate professor of computer science and a co-founder of D-Lab at the School of Information Technology, King Mongkut's University of Technology Thonburi, Thailand. Jonathan holds a Ph.D. from the University of Toronto, where he has also served as a visiting professor. In addition to his role as the section editor of *Heliyon Computer science*, Dr. Chan is an action editor of *Neural Networks*, and a member of the editorial boards of *International Journal of Machine Intelligence and Sensory Signal Processing*, *International Journal of Swarm Intelligence*, and *Proceedings in Adaptation, Learning and Optimization*.

Dr. Chan is a founding member and a current VP of the IEEE-CIS Thailand Chapter, and a senior member of IEEE, ACM, and INNS, a member of the Professional Engineers of Ontario (PEO), and a governing board member of APNNS. He also holds an NVIDIA Deep Learning Institute (DLI) University Ambassadorship and is a certified DLI instructor. His research interests include intelligent systems, biomedical informatics, and data science and machine learning in general.

Dentistry

Meet the full editorial team for [Heliyon Dentistry](#).



Gaetano Isola, PhD

Dr. Gaetano Isola qualified in Dentistry at the University of Messina, Italy and obtained his PhD in "Physiopathology of the Stomatognathic Apparatus and Dental Materials" at the University of Turin, Italy. He is a visiting research fellow at the Laboratory of the Study of Calcified Tissues and Biomaterials at the Department of Periodontology, Université de Montréal, Canada. Dr. Isola did an advanced course in periodontology at the University of Ferrara and a 3-year certificate in oral surgery at the University of Naples "Federico II." He is a visiting Professor at the Department of Periodontology, University of North Carolina at Chapel Hill, USA and at the Department of Oral Surgery, University of Granada, Spain. He is also a visiting researcher at the Department of Implantology and Oral Surgery, University of Bern, Switzerland, and the Department of Periodontology, Eastman Dental Institute, London.

Dr. Isola is an active member of the Italian Society of Oral Surgery (SIdCO) and of the International Piezoelectric Surgery Academy (IPA). He serves on the board of the International Association of Dental Research (IADR) and is a member of the Italian Society of Periodontology (SIdP), as well as an active member of the International IADR Constitution Committee of the International Association of Dental Research (IADR) (2016–2019 and 2019–2022).

His main research interests focus on the clinical, biological, and pharmacological aspects of periodontitis, and the relationship between oral health and systemic health and the pre-neoplastic disorders.

Earth science

Meet the full editorial team for [Heliyon Earth science](#).



Prof. Andrew S. Hursthouse

Professor Hursthouse is a professor of environmental geochemistry at the University of the West of Scotland (UWS) and holds a Ph.D. in environmental radioactivity from University of Glasgow and a B.Sc. degree in geochemistry from University of Reading. He holds a 100 talent high-end expert fellowship at Hunan University of Science & Technology, Xiangtan, PRC. He has editorial roles in several earth and environmental science journals and has worked in academic and industrial research environments.

Professor Hursthouse's areas of interest and expertise are in earth process interactions and the environmental geochemistry of metallic elements, resource exploitation and implications for human health, and this approach also applied to environmental pollution, industrial processes, economic development and society; remediation and treatment of chemical pollution; chemical and environmental hazards, waste and environmental management and regulation.

Education

Meet the full editorial team for [Heliyon Education](#).



Prof. David González-Gómez

Heliyon Education is led by Section Editor David González-Gómez, Ph.D. Dr. González-Gómez is a Professor in the Department of Science and Mathematics Education and the Dean of the Teaching Trainer School at the University of Extremadura (Spain). Dr. González-Gómez is known internationally for work in science education; science, technology, engineering, and mathematics (STEM); active learning methodologies for teaching science; affective domain in the science learning process; education for the sustainability; SDGs. Currently, he is an advisory council of the Science, Technology, and Innovation of Extremadura government in Spain.

Energy

Meet the full editorial team for [Heliyon Energy](#).



Dr. Socrates Kaplanis

Prof. Socrates Kaplanis obtained his degree in physics from University Thessaloniki, a MSc in nuclear reactors from Aston University, and a PhD in radiation detection and modelling from the University Patra. He has held academic positions including professor of renewable energy systems at the Technological Educational Institute of Patra, head of the renewable energy systems laboratory, honorary professor and doctor honoris causa at the Transylvania University in Brasov, and as a visiting professor at the University of Applied Sciences in Aachen, Germany.

Prof. Kaplanis has a research background in solar radiation, prediction modelling, zero and intelligent energy buildings, PV systems engineering, solar thermal engineering, and PV based hybrid systems. He has held various posts, including president of the Technological Educational Institute of Patra, president of the Technological Educational Institute of Western Greece, and vice-president and President of the European Institutions in Higher Education (EURASHE).

Engineering

Meet the full editorial team for [Heliyon Engineering](#).



Prof. Andrea Francesco Morabito

Professor Andrea Francesco Morabito received his Ph.D. in computer, biomedical, and telecommunications engineering from the University of Reggio Calabria, Italy, where he has also served as an assistant professor in electromagnetic fields since 2010. His

research work is mainly focused on models and effective strategies for the solution of inverse problems, in particular, antenna synthesis, phase retrieval, and electromagnetic inverse scattering.



Prof. Mohammad Mehdi Rashidi

Professor Mohammad Mehdi Rashidi received his Ph.D. in mechanical engineering from Tarbiat Modares University, Iran. He is currently a professor of mechanical engineering at Tongji University in Shanghai, China, and previously taught at Bu-Ali University in Iran. Prof. Rashidi was named a 2018 highly cited researcher by Clarivate Analytics.

Environment

Meet the full editorial team for [Heliyon Environment](#).



Prof. Frederic Coulon

Professor Frederic Coulon holds a chair in Environmental Chemistry & Microbiology at Cranfield University, UK. In addition to his position as section editor for *Heliyon Environment*, Prof. Coulon is an associate editor for *Environment International* and *Science of the Total Environment*. His professional interests include: soil and water chemistry; fate and transport of chemicals in surface and subsurface waters; water and wastewater treatment; soil and sediment treatment; hazardous waste site remediation; energy and environment; population and environment; and public communication of environmental science and engineering. His research achievements address international priorities under the umbrella of the Water-Soil-Waste nexus across sectors and scales. His work is premised on the understanding that environmental resources are inextricably intertwined and therefore there is a need of advancing a nexus approach to enable integrated and sustainable management of water, soil and waste systems.



Prof. Christian Sonne

Professor Christian Sonne, DVM, PhD, DScVetMed, Dipl. ECZM-EBVS, holds a professorship in veterinary ecotoxicology and wildlife medicine at Aarhus University, Denmark. In addition to his position as section editor for *Heliyon Environment*, Prof. Sonne serves as special issues editor for *Environmental Pollution*. Since 1997, Prof. Sonne has specialized in the cross-field of biological effects from exposure to environmental chemicals, diseases and climate change, giving him a unique insight and profile working with a broad range of animals including predatory mammals, raptorial birds, sea birds, fish and humans. He has a broad insight and interest in internal and reproductive organs (histopathology, size, and morphology), skeletal system (bone density and morphology using e.g. DXA scanning), immune system (intra dermal testing of lymphocyte functioning, immune globulin production and cytokine and APP expressions), endocrine system (steroid and peptide hormones), PBPK modelling, blood biochemistry and infectious diseases (zoonosis). Prof. Sonne uses his global network to obtain interdisciplinary research results. Since 2015, he has applied his in-depth knowledge and understanding of biological processes to also include specific un-solved wildlife issues in Denmark (eider duck population declines) and health of raptors. Recently his innovative approaches have led to the first interactions with private industry focusing on natural resources developments and translational medicine within insulation, osteoporosis and metabolic syndrome. Prof. Sonne also specializes in surgical field implantations of intra-coelomic (abdominally) and subcutaneously satellite transmitters (PTTs) in various sea bird species and immobilization of deer spp.

Food science and nutrition

Meet the full editorial team for [Heliyon Food science and nutrition](#).



Dr. Lilian Mariutti

Dr. Lilian R. B. Mariutti received her master and doctorate degrees in food science from the School of Food Engineering - University of Campinas, Brazil, where she currently has a position as assistant professor. She was a researcher fellow in the Laboratory of

Veterinary Drug Residues of the Brazilian Ministry of Agriculture, Livestock and Food Supply. Her research focuses on the identification and bioaccessibility of bioactive compounds and lipids and design of food ingredients from non-conventional sources.

Genetics

Meet the full editorial team for [Heliyon Genetics](#).



Qiang Wu, PhD

Dr. Qiang Wu is an associate professor in the State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology. He obtained his Ph.D degree from National University of Singapore in 2003. He then received his postdoc training in Genome Institute of Singapore (Mentor: Prof Huck Hui Ng) and the Gurdon Institute, University of Cambridge (mentor: Prof Magdalena Zernicka-Goetz). He went back to National University of Singapore as an assistant professor in 2009. He joined Macau University of Science and Technology in 2017.

Dr. Wu's research interest is to study how genetic and epigenetic factors determine stem cell fates and regulate cancer progression with a combination of molecular, cellular and high throughput approaches.

Global Health & Infectious Diseases

Meet the full editorial team for [Heliyon Global Health & Infectious Diseases](#).



Dr. Chaisiri Angkurawaranon

Public Health

[Chiang Mai University](#), Chiang Mai, Thailand

Chaisiri Angkurawaranon received his MD from Chiang Mai University and specialises in Family Medicine. He received a Masters in Medical Statistics and a PhD in Non-communicable Disease Epidemiology from the London School of Hygiene and Tropical Medicine. His research focuses on global health issues related to ageing and chronic conditions (both communicable and non-communicable) in primary care.



Assoc. Prof. Nitika Pant Pai

Infectious Disease

[McGill University](#), Montreal, Canada

Dr. Nitika Pant Pai is a tenured Associate Professor in the Department of Medicine at McGill University. Her global implementation research program for the past twenty years is focused on point-of-care diagnostics for HIV and other sexually transmitted blood borne infections; specifically the innovation, implementation and impact of digital strategies with rapid diagnostics and wearable solution. She develops integrated connected strategies with digital innovations, Bayesian diagnostics, artificial intelligence to plug health service delivery gaps in diagnostics in rapid diagnostics. She serves to inform domestic and global policy on point-of-care diagnostics.

Her research program is based in Canada, India and South Africa. She has led many diagnostic trials, cohort/cross sectional studies, meta-analyses, systematic reviews, modelling studies, to inform the gaps in policies to end the HIV epidemic. Her research has been supported by grants from the Canadian Institutes of Health Research, the FRQS, Grand Challenges Canada, Bill and Melinda Gates Foundation, National Institutes of Health, MRC SHIP, South African DST, IC-IMPACTS, Clinton Health Access Initiative, among others.

She has served on many technical working groups for national and international agencies: WHO, Foundation for Innovative Diagnostics, PSI, The Bill and Melinda Gates Foundation, ASLM, CDC, PHAC, REACH, among others. She has advised the office of the US Congress on multiplex testing. She has also contributed to HIV self-testing guidelines and policy guidance for HIV self-testing for the WHO. She serves the Strategic Advisory Board of the Foundation for Innovative Diagnostics and is on WHO's Roster of Digital Health Experts. She serves on the Editorial Board for biomedical journals and regularly reviews for key international health agencies.

She is an elected member of the College of New Scholars, Artists & Scientists of the Royal Society of Canada.

Immunology

Meet the full editorial team for [Heliyon Immunology](#).



Mats Waldemar Johansson, PhD

Immunology, Eosinophils

Dr. Mats W. Johansson received his PhD degree in biology within the research field of invertebrate immunology/innate immunity at Uppsala University, Sweden, was a postdoctoral fellow in cell biology at the Sanford Burnham Prebys Medical Discovery Institute, La Jolla, California, USA, and was then an Assistant and Associate Professor, and Director of Studies of biology at Uppsala University. He is currently a Senior Scientist and Research Professor (honorific) at the Morgridge Institute for Research, Madison, Wisconsin, USA, and affiliated as an Honorary Associate/Fellow with the Division of Allergy, Pulmonary and Critical Care Medicine of the Department of Medicine and the Department of Biomolecular Medicine, University of Wisconsin-Madison. Since coming to Madison he has done research on eosinophil biology, asthma, and eosinophilic esophagitis (EoE), and now recently also COVID-19.

Information Science

Meet the full editorial team for [Heliyon Information Science](#).



Prof. Gregorio González Alcaide

Gregorio González-Alcaide (PhD) is a full Professor at the Department of the History of Science and Library & Information Sciences, at the University of Valencia.

Dr. González Alcaide teaching activities include Bibliometrics, skills in writing and academic communication and processes for evaluating research activities. He has also worked to raise awareness on the importance of academic honesty, to discourage behaviors like plagiarism and to foster respect for the ethical principles that must guide the research and publication process.

His main line of research has focused on the study of scientific collaboration by means of Bibliometrics and social network analysis as research methodologies. His studies have aimed to determine the extent of cooperative practices, structural properties, and the characteristics of scientific networks at different analytical levels (authors, institutions, and countries) and in different disciplines or areas of knowledge. He has also investigated cooperative practices as a process and researchers' perceptions with regard to this phenomenon, combining quantitative and qualitative approaches based on surveys and interviews.

Materials science

Meet the full editorial team for [Heliyon Materials science](#).



Prof. Luis M. Gandía

Luis M. Gandía is a full professor of chemical engineering at the Public University of Navarre (UPNA) since 2010. Prof. Gandía obtained his Ph.D. in chemistry at the Faculty of Chemistry of the University of the Basque Country in Donostia/San Sebastián in 1993. He is a founding member of the Institute for Advanced Materials (InaMat) at UPNA. He is the head of a **multi-disciplinary** research team mainly working on renewable resources valorization and the development of catalytic materials for environmental and energy applications. His research interests include: preparation and physico-chemical characterization of heterogeneous catalysts; structured and micro-structured catalysts and chemical reactors; photocatalysis; biofuels and synthetic fuels; hydrogen energy; Li-ion batteries; methane conversion; CO₂ valorization and Computational Fluid Dynamics (CFD).

Mathematics

Meet the full editorial team for [Heliyon Mathematics](#).



Prof. Hermann J. Eberl

Dr. Hermann Eberl is a professor in the Department of Mathematics and Statistics at the University of Guelph (Canada), where he is also the director of the Biophysics Interdepartmental Graduate Program. Prior to joining the University of Guelph he obtained his graduate degrees (Dipl.Math., Dr.rer.nat) at the Technical University of Munich (Germany) and was a postdoctoral fellow first at the Delft University of Technology (the Netherlands), and then at the GSF National Research Center for Environment and Health in Oberschleissheim (Germany).

His research is in mathematical modelling, analysis, and simulation of biological systems and their interaction with their physical environment. This encompasses dynamical systems, partial differential equations, numerical analysis and scientific computing. The two primary strands of his research in recent years were the development and application of mathematical methods in biofilm research and mathematical modelling of honeybee colonies and their diseases.

Microbiology

Meet the full editorial team for [Heliyon Microbiology](#).

**Assoc. Prof. Dana Stanley**

Associate Professor Dana Stanley was awarded a PhD in molecular microbiology from Victoria University, Melbourne, in 2009. Her PhD project, "Generation and Characterisation of Ethanol-Tolerant *Saccharomyces cerevisiae* Mutants," investigated the molecular and metabolic determinants of ethanol tolerance in yeast and was awarded "the most outstanding PhD in 2009" by the University. Prof. Stanley held a postdoctoral position in CSIRO's Animal Health Laboratories (AAHL), one of the world's most sophisticated animal research laboratories, where she researched poultry intestinal health, specifically gut microbiota and genetics. Currently, Prof. Stanley is a leader of the molecular microbiology research cluster at Central Queensland University, focusing in human and livestock intestinal health, probiotic and next generation antibiotic development and pathogen control. She is working in collaboration with world's leading probiotic companies on research projects aiming to improve intestinal health of agricultural animals and humans. Prof. Stanley's work has been published in *Nature Medicine* (as the first author), *Nature Communications* and *Nature Immunology*.

Neuroscience

Meet the full editorial team for [Heliyon Neuroscience](#).

**Assoc. Prof. Mario Tiberi**

Dr. Mario Tiberi is a senior scientist at the Ottawa Hospital Research Institute's Neuroscience Program, and associate professor at the University of Ottawa Faculty of Medicine in the departments of medicine, cellular and molecular medicine, and psychiatry. He is also a member of the University of Ottawa Brain and Mind Research Institute. Dr. Tiberi completed his PhD in Pharmacology (1990) on opioid receptors at the Université de Montréal under the supervision of Dr. Jacques Magnan, before moving on to a very successful post-doctoral training at the Howard Hughes Medical Institutes at Duke University in Dr. Marc Caron's laboratory. It was during his postdoctoral training that Dr. Tiberi refined his area of research expertise in molecular biology and biochemistry of dopamine receptors. His research interests focus on dopamine receptors, G proteins, signal transduction, desensitization and phosphorylation. Dr. Tiberi's work aims to understand complex structure and molecular relationships of dopamine receptor signaling complexes using in vitro cellular systems and pre-clinical in vivo models, with the aim of aiding in the development of novel therapeutic strategies for brain disorders such as Parkinson's disease, stroke, schizophrenia and drug addiction. Dr. Tiberi has published over 50 scientific papers and edited two books. He has wide experience with undergrad and graduate student supervision as well as teaching. Many of his former graduate students have gone on to successful independent research careers.

Pharmaceutical science, pharmacology and toxicology

Meet the full editorial team for [Heliyon Pharmaceutical science, pharmacology and toxicology](#).

**Prof. Emilio Clementi**

Emilio Clementi graduated in medicine and surgery at the University of Milano, received his doctorate in pharmacotherapy at the University of Brescia to move as research fellow to the University College London. He is currently full professor of pharmacology and director of the clinical pharmacology unit of the National Health System at the University of Milano, co-opted member in the executive committee of the International Union of basic and clinical Pharmacology (IUPHAR).

He has published on the pathophysiology of nitric oxide and its relevance in therapeutic perspective, especially in skeletal muscle, and on pharmacokinetics, pharmacogenetics and pharmacoepidemiology in paediatrics. He is presently the editor in chief of pharmacological research.



Prof. Dimitrio Lamprou

Dimitrios Lamprou (Ph.D. MBA) is a reader in pharmaceutical engineering and the MSc programme director in industrial pharmaceuticals at the School of Pharmacy in Queen's University Belfast (UK). He is also the chair at United Kingdom and Ireland Controlled Release Society (UKICRS). Dr. Lamprou specialises in the areas of pharmaceutical manufacturing & emerging technologies and his research and academic leadership have been recognised in a range of awards, including the Royal Pharmaceutical Society Science Award and the Scottish Universities Life Sciences Alliance Leaders Scheme Award. His group is applying nano and microfabrication techniques in pharmaceutical and medical device manufacturing, such as 3D printing & bioprinting, electrospinning and microfluidics.



Dr. Martin Leonard

Dr. Leonard obtained his PhD in pharmacology in 2000 from University College Dublin, Ireland. He has over 15 years' experience as a toxicologist focussed to developing and improving on models and methods for assessment of toxicological hazard, including the use of high content omics technology and iPSC in vitro models of the airway. Dr. Leonard is a European registered toxicologist and currently holds a position as principal toxicologist at Public Health England directing research into the mechanisms of allergen and particulate hazard associated with asthma and allergic airway disease. Dr. Leonard has published extensively in the fields of toxicology, cell biology and immunology. In addition to section editor at Heliyon, he is also associate editor for the journal Toxicology in Vitro.

Physics

Meet the full editorial team for [Heliyon Physics](#).



Prof. Gerald Cleaver

Gerald B. Cleaver earned his Ph.D. in early universe cosmology and string theory at Caltech. He is a professor and graduate program director of the department of physics at Baylor University in Waco, Texas. He also heads the Early Universe Cosmology and String Theory (EUCOS) division of Baylor's Center for Astrophysics, Space Physics and Engineering Research (CASPER).

With CASPER colleagues, Prof. Cleaver (i) explores quantum gravity effects in the early universe and the signatures of specific quantum gravity proposals, especially with regard to the cosmic microwave background (CMB), (ii) studies relativistic thermodynamics and physics & cosmology applications to cryptography, (iii) analyzes spacetime curvatures (and their possible divergences) for theorized spacetime wormholes, and (iv) investigates advanced spacecraft propulsion systems. Prof. Cleaver was a member of a NASA blue-ribbon review committee for advanced propulsion system proposals. He has written over 100 journal articles and conference proceedings, is co-author of an elementary particle physics textbook, author of six book chapters, on the editorial board of four science journals, and referee for nine physics journals.

Psychology

Meet the full editorial team for [Heliyon Psychology](#).



Dr. Pavica Sheldon

Prof. Pavica Sheldon received her PhD in communication studies from Louisiana State University, and currently serves as chair and associate professor in the Department of Communication Arts at University of Alabama in Huntsville. Dr. Sheldon is an author of three books and over 40 journal articles, studying uses and gratifications of social media, and also how people communicate forgiveness in interpersonal relationships.

Quantitative biology, biotechnology and bioengineering

Meet the full editorial team for [Heliyon quantitative biology, biotechnology and bioengineering](#).



Dr. Andrea de Martino

Andrea De Martino received his PhD in theoretical physics from SISSA (Trieste, Italy). He worked at the Hahn-Meitner-Institut (Berlin, Germany), the Italian Institute for the Physics of Matter (Rome, Italy) and Sapienza University (Rome) before joining the National Research Council and, more recently, the Italian Institute for Genomic Medicine in Turin, where he is part of the Statistical Inference & Computational Biology Unit.

Dr. De Martino is generally interested in the physics of living systems across **multiple** scales, from single cells to ecosystems. He works in broadly defined systems biology (computational & mathematical biology, genome-scale models, bioinformatics, etc.). Dr. De Martino's favorite questions revolve around the functional roles of cell-to-cell heterogeneities, the interplay between physiology and gene expression in proliferating vs quiescent cells, the processing of information by biological networks, and the emergence of **multi**-cellular and population-level behavior.

Social science

Meet the full editorial team for [Heliyon Social science](#).



Prof. P. Vigneswara Ilavarasan

P. Vigneswara Ilavarasan (PhD - IIT Kanpur) is a professor of information systems at the Dept. of Management Studies, Indian Institute of Technology Delhi. He researches and teaches about the interaction of information and communication technologies (ICTs), society, and business.

Dr. Ilavarasan has been a visiting research fellow at United Nations University - School of Computing and Society (Macau) and School of Management, Curtin University (Perth). He is a recipient of the Outstanding Young Faculty Fellowship Award at IIT Delhi and Prof. M.N. Srinivas Memorial Prize of the Indian Sociological Society. He is also a senior research fellow at LIRNEasia, a leading regional ICT policy and regulation think tank. He has received large research grants from Dept of Science & Technology (Govt of India), ICSSR (India), IDRC (Canada), Oxford Analytica (UK), IPTS (European Commission), CIPPEC (Argentina) and IdeaCorp (Philippines). His research has appeared in various leading international journals and at numerous global conferences.

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Research article

The community psychosocial burden during the COVID-19 pandemic in Indonesia

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ABSTRACT

Background: Restricting community mobility during COVID-19 can potentially trigger anxiety, depression and stress in the community. The study aims to analyze variables associated with the community psychosocial burden (anxiety level) during the co-19 pandemic in Indonesia.**Methods:** This study collected data (n = 8,031) online. Psychosocial burden was measured based on the anxiety level which include 5 aspects, such as economic, religious, educational, employment, and social issues. Each question used a Likert scale. Six independent were examined, such as age, gender, religion, marital, education, and employment. In the final stage, a multivariate test was performed using a multinomial logistic regression.**Results:** Someone older experienced less high anxiety. The age group of 20–29 years was 4,330 times likely to experience higher anxiety than the age group of ≥50 years. While, those in the age group of 40–49 years were 2,322 times more likely to have higher anxiety than those in the age group of ≥50 years. Male respondents had lower possibility of medium to high anxiety than females. Respondents with secondary and lower education had 3,117 times possibilities to experience higher anxiety than those with high education level.**Conclusion:** Four variables affected the psychosocial burden i.e., anxiety level of community in Indonesia. These involved age, gender, education, and employment.

1. Introduction

Indonesia so far has not shown a decline in COVID-19 cases. Data accessed on 15 June 2020 from the official website of the Indonesian government, www.covid19.go.id, illustrates that the distribution of COVID-19 cases has been fairly distributed in all provinces and districts/cities. Some regions have indicated a new case. In other words, it has not indicated that this outbreak will end soon.

The government has taken several strategies to break the chain of COVID-19 transmission. For example, it issued the Regulation of Indonesian Ministry of Health No. 9 of 2020 concerning Large-Scale Social Limitation Guidelines in accelerating COVID-19 management. It regulates some restrictions for the community, such as in school hours, operation of public transportation, work from home, and so forth. This regulation limits the mobility of community (Task Force for the

Acceleration of Handling COVID-19, 2020a; the Minister of Health of the Republic of Indonesia, 2020).

The regulation and restrictions have affected all aspects, such as religious, economy, education and social psychology. Mass media reported that some people still have to work outside even though the local government has reinforced the regulation (Laksono et al., 2020). A study found longer large scale social restrictions might result in more violations in the community (Ibad et al., 2020). Another phenomenon is that some religious groups still gather to perform religious rituals in which some new cases potentially can occur.

The limitation of community mobility during COVID-19 can potentially trigger anxiety, depression and stress in the society (Bohlken et al., 2020). Several factors that affect anxiety include environmental, emotional, and physical factors. Anxiety can arise as people are urged to stay at home. It, therefore, results in a domino effect due to the suppressed situation. For example, people cannot do daily activities like

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normally, interact with their social group, perform religious activities outside, and so on (Mukhtar and Rana, 2020).

Several recent studies in some countries have reported anxiety which resulted in psychosocial anomalies during the COVID-19 pandemic. This situation can lead to a negative situation, such as decreasing immunity. During the COVID-19 pandemic, people should maintain their immunity (Lima et al., 2020; Mukhtar and Rana, 2020; Rajkumar 2020). One study even reported high anxiety could lead to suicide incidents during COVID-19 pandemic (Sher, 2020).

Anxiety is also caused by the abundance of hoax information on social media, and eventually it can worsen the community psychological condition (Athbi and Hassan, 2019; Costa, 2019; Evans, 2020). Such worse situation might be originated from the opinion of celebrities and influencers about the theory of conspiracy on the COVID-19 pandemic (Task Force for the Acceleration of Handling COVID-19 2020b). For example, the president of the USA, Donald Trump, believed that the pandemic was brought by the theory of conspiracy as a form of resistance to the power of government (Dyer, 2020).

Public anxiety can lead to new public health problems. The WHO defines health as a good condition seen from physical, social and mental dimensions (World Health Organization, 1946). Anxiety is considered as an unhealthy condition, which needs special attention, especially in the current outbreak of COVID-19. Based on the background, this study analyzed variables associated with the community psychosocial burden (anxiety level) during the COVID-19 pandemic in Indonesia.

2. Methods

2.1. Data source

The data collection was carried out by distributing an online survey to Indonesian citizens in 8 days (June 6th-13th, 2020). The final number of respondents was 8,031 respondents.

2.2. Variables

Psychosocial burden was determined based on anxiety level (Li et al., 2020; Moccia et al., 2020). The anxiety level was measured from 5 aspects, such as economic, religious, educational, employment, and social relationship aspects. Each question in the questionnaire used a Likert scale. The anxiety level was measured by adding up scores of those five aspects. The results were categorized into low, middle, and high category. This study has some limitations as it does not validate and measure the accuracy of data based on certain standards.

This study included 6 independent variables in the analysis, such as age group, gender, religion, marital status, education level, and employment. Age group was the respondent's last birth day categorized into ≤ 19 , 20–29, 30–39, 40–49, and ≥ 50 years. While, gender was categorized into male and female. In terms of religion, the respondents were categorized into Moslem, Christian, Catholic, Hindu, and Buddhist. Marital status were grouped into single, married, and divorced/widowed. Education level was the latest of education level, categorized into secondary and under, and higher education. Employment referred to the respondents' job. It was divided into unemployed, public servant/army/police, private sector, entrepreneur, farmer/fisherman/labor, and housewife.

2.3. Data analysis

All dependent and independent variables were dichotomous variables. In the initial stage, the researchers performed Chi-Square bivariate tests to examine the relationship of dependent and independent variables. In the final stage, a multivariate multinomial logistic regression test was performed to determine factors associated with anxiety level. All statistical analyses were carried out using SPSS 22 software.

2.4. Ethical approval

This study has received an ethical approval from the National Ethics Commission (No: RK.05/KEPK/STIK/VIK/2020). While, the respondents' identities were removed from the dataset. The respondents provided a written approval for their involvement in the study.

3. Results

Table 1 shows the composite distribution of psychosocial burden variables. Education and employment trigger higher anxiety level in the respondents than other aspects do.

The co-linearity test of the psychosocial burden variables is presented in Table 2. The tolerance value of all variables was at > 0.10 , and VIF value for all variables was at < 10.00 . These results show no symptoms of multicollinearity in the regression model.

Table 3 shows the statistical description of respondents' characteristics. It can be seen that the respondents who experienced high anxiety level were dominated by those in the age group of 20–29 years and females.

Table 3 informs that the Moslem respondents dominated all anxiety levels. The respondents who have been married dominantly experienced all anxiety levels. From the perspective of education level, those with higher education level were dominantly at all anxiety levels.

Moreover, the respondents who worked in a private sector or professional job had high anxiety level. Low and middle anxiety level was dominated by those who worked as public servants, army, or police.

Table 4 displays the multinomial logistic regression of the psychosocial burden conducted using low anxiety level as a reference.

Table 4 shows that male respondents were 0.544 times more likely to experience medium anxiety level than female respondents (OR 0.544; 95% CI 0.372–0.795). It means that males had a lower probability to experience the medium anxiety level than females.

Farmers, fishermen, or labors had the possibility of 1392586.887 times to be at the medium anxiety level compared to housewives (OR 1392586.887; 95% CI 824529.062–2352007.136). It indicates the respondents who worked as a farmer, fisherman, or labor had much higher chance of being at the medium anxiety level than a housewife.

With respect to age, the respondents aged between 20–29 years were 4,330 times more likely to experience high anxiety level than those aged ≥ 50 (OR 4,330; 95% CI 2,061–9,093). While, those in the 30–39 age group were 3,802 times more likely to bet at high anxiety level than those in the ≥ 50 age group (OR 3,802; 95% CI 2,240–6,453). The respondents who were 40–49 years had 2,322 times more possibilities of experiencing high anxiety than those in the ≥ 50 age group (OR 2,322; 95% CI 1,402–3,846). It explains older people tend to have lower possibility of experiencing high anxiety.

Table 4 also illustrates that male respondents were 0.510 times more likely to experience high anxiety than females (OR 0.510; 95% CI 0.349–0.746). It indicates males had a lower likelihood of high anxiety than females.

Additionally, the respondents with secondary and lower education levels had 3,117 times more possibilities of high anxiety than those with high education level (OR 3,117; 95% CI 1,646–5,904). In other words, those with higher education level were less likely at the high anxiety level.

The respondents who worked as public servants, army, police were 0.120 times more likely to feel highly anxious compared to housewives (OR 0.120; 95% CI 0.016–0.884). It means some employment status, such as public servant, army, or police had a lower likelihood of experiencing high anxiety.

4. Discussion

This study has some limitations as it does not validate and measure the accuracy of data based on certain standards. However, in general, the

Table 1. The composite distribution of the community psychosocial burden during the COVID-19 pandemic in Indonesia, 2020 (n = 8,031).

No	Questions	1	2	3	4	5
1	How would you describe your feeling on your economic situation during the COVID-19 pandemic?	0.4%	2.6%	38.6%	44.1%	14.3%
2	How would you describe your feeling situation on your religious life during the COVID-19 pandemic?	1.6%	6.4%	37.1%	44.0%	11.0%
3	How would you describe your feeling on your or your children's education during the COVID-19 pandemic?	0.6%	2.4%	22.8%	52.0%	22.2%
4	How would you describe your feeling on your work life during the COVID-19 pandemic?	1.0%	3.0%	33.4%	47.0%	15.7%
5	How would you describe your feeling on social relationship during the COVID-19 pandemic?	0.5%	2.5%	30.7%	55.6%	10.6%

Note: 1 = not significantly worried; 2 = not worried; 3 = moderately worried; 4 = worried; 5 = very worried.

Table 2. The results of the co-linearity test of the community psychosocial burden during the COVID-19 pandemic period in Indonesia, 2020 (n = 8,031).

Variables	Collinearity Statistics	
	Tolerance	VIF
Age group	0.469	2.134
Gender	0.954	1.048
Religion	0.994	1.006
Marital status	0.498	2.009
Education level	0.730	1.370
Employment	0.927	1.079

Dependent variable: The anxiety level.

Table 3. Statistical description of respondents' characteristics (n = 8,031).

Variables	The Anxiety Level						P
	Low		Middle		High		
	n	%	n	%	n	%	
Age groups							*** < 0.001
• ≤ 19	2	1.7%	267	7.9%	414	9.1%	
• 20-29	25	20.7%	1148	34.1%	2044	45.0%	
• 30-39	26	21.5%	754	22.4%	1081	23.8%	
• 40-49	30	24.8%	674	20.0%	666	14.7%	
• ≥ 50	38	31.4%	527	15.6%	335	7.4%	
Gender							*** < 0.001
• Male	64	52.9%	1085	32.2%	1281	28.2%	
• Female	57	47.1%	2285	67.8%	3259	71.8%	
Religion							0.807
• Moslem	109	90.1%	2997	88.9%	4074	89.7%	
• Christian	5	4.1%	230	6.8%	272	6.0%	
• Catholic	4	3.3%	80	2.4%	114	2.5%	
• Hindu	3	2.5%	58	1.7%	73	1.6%	
• Buddhist	0	0.0%	5	0.1%	7	0.2%	
Marital status							*** < 0.001
• Single	24	19.8%	1328	39.4%	2126	46.8%	
• Married	91	75.2%	1952	57.9%	2292	50.5%	
• Divorced/Widowed	6	5.0%	90	2.7%	122	2.7%	
Education level							*** < 0.001
• Secondary and under	15	12.4%	1015	30.1%	2040	44.9%	
• Higher	106	87.6%	2355	69.9%	2500	55.1%	
Employment							*** < 0.001
• Unemployed	9	7.4%	558	16.6%	916	20.2%	
• Public servant/army/police	68	56.2%	1362	40.4%	1350	29.7%	
• Private sector/Professional	31	25.6%	927	27.5%	1426	31.4%	
• Entrepreneur	12	9.9%	297	8.8%	504	11.1%	
• Farmer/fisherman/labor	0	0.0%	27	0.8%	49	1.1%	
• Housewife	1	0.8%	199	5.9%	295	6.5%	

Note: * P < 0.05; ** P < 0.01; *** P < 0.001.

Table 4. The result of multinomial logistic regression of community psychosocial burden during COVID-19 pandemic in Indonesia, 2020 (n = 8,031).

Variables	The Anxiety Level							
	Medium				High			
	Sig	OR	Lower Bound	Upper Bound	Sig	OR	Lower Bound	Upper Bound
Age group: ≤ 19	0.282	2.578	0.460	14.453	0.067	5.006	0.895	28.005
Age group: 20-29	0.203	1.619	0.771	3.399	***0.000	4.330	2.061	9.093
Age group: 30-39	0.053	1.679	0.992	2.841	***0.000	3.802	2.240	6.453
Age group: 40-49	0.126	1.476	0.896	2.431	**0.001	2.322	1.402	3.846
Age group: ≥ 50	-	-	-	-	-	-	-	-
Gender: Male	**0.002	0.544	0.372	0.795	**0.001	0.510	0.349	0.746
Gender: Female	-	-	-	-	-	-	-	-
Marital status: Single	0.115	2.402	0.808	7.139	0.505	1.447	0.488	4.295
Marital status: Married	0.285	1.612	0.671	3.872	0.526	1.328	0.553	3.189
Marital status: Widowed/Divorced	-	-	-	-	-	-	-	-
Education Level: Secondary	0.067	1.819	0.958	3.452	***<0.001	3.117	1.646	5.904
Education Level: Higher	-	-	-	-	-	-	-	-
Employment: Unemployed	0.099	0.167	0.020	1.403	0.093	0.161	0.019	1.358
Employment: Public servant/army/police	0.055	0.142	0.019	1.043	*0.037	0.120	0.016	0.884
Employment: Private sector	0.069	0.154	0.021	1.155	0.068	0.154	0.021	1.150
Employment: Entrepreneur	0.053	0.130	0.016	1.024	0.058	0.135	0.017	1.066
Employment: Farmer/fisherman/labor	***<0.001	1392586.887	824529.062	2352007.136	.	1456079.053	1456079.053	1456079.053
Employment: Housewife	-	-	-	-	-	-	-	-

Note: * P < 0.05; ** P < 0.01; *** P < 0.001.

results of this study are in line with the previous research which found the severity of negative psychological impacts on psychiatric patients during the COVID-19 epidemic due to strict lockdown measures (Hao et al., 2020).

This study found that older ages tend to experience high anxiety level less frequently. In other words, younger age might overcome anxiety due to situations encountered during the pandemic. People with older age usually have experienced many events in their lives as they can learn from their past experience and adapt to new situations.

Other studies also show maturity and age were hypothesized to be positively related to subjective well-being, i.e, having the ability to overcome and adapt to existing problems and situations (Wang, Pan, Wan, Tan, and Xu, 2020). Another article also found that older people generally could interpret events in their lives better than those younger (Wang, Pan, Wan, Tan, Xu, et al., 2020).

Analyzed from gender, males had a lower probability to experience medium to high anxiety level than females. This study reveals that males could cope with stressful situations better during the pandemic than females. Identified from the aspects studied, only education and employment aspects could have more tendency to increase anxiety level.

These results reinforce another study, which found that males had more safe psychosocial condition (Kiely et al., 2019). The While, female respondents were more likely to experience mental disorders in the form of depression and anxiety than male respondents.

As previously said, it was no surprise that education became the determinant of anxiety level. Someone with a high education level could access the right information that calm his psychological condition (Hurwitz et al., 2008). A better education level can also make someone more careful and thoughtful about decision making from various perspectives (Tappe et al., 2010).

Some studies in several countries, such as in America (Banks et al., 2019), Lithuania (Kalediene and Petrauskiene, 2000), and in the Netherlands (Cloin et al., 2011) informed the same findings. In general, some of the studies reported education level was directly proportional to individual's ability to respond to various situations in his life.

In another aspect, employment is the other determinant of the community psychosocial burden during the COVID-19 pandemic. Farmers, fishermen, and factory workers who were involved in this study

experienced quite high anxiety compared to other occupational groups. It may be due to job characteristics contrary to the existing health protocols applied, such as wearing masks, physical distancing, and avoiding crowds (Task Force for the Acceleration of Handling COVID-19 2020a). However, this study shows opposite finding to the previous research which found low anxiety in factory workers could be due to precautionary measures (Tan et al., 2020).

Those employments also cannot be restricted since the respondents who worked in those sectors had to meet their family needs (Baker, 2020).

While, other employments can be relatively modified and adjusted to the existing regulations (Kramer and Kramer, 2020). Among others include private employees who can work from home by changing some details of assigned tasks. Besides, public services also encounter some adjustments, for instance automation in its processes. In other words, people do not need to be present when they are in needs of the services.

The anxiety level can be reduced by using cognitive behavior therapy (Ho et al., 2020) to avoid more assigned serious health problems.

5. Conclusions

This study concluded that four variables affected the community psychosocial burden during the COVID-19 pandemic in Indonesia. These include age, gender, education, and employment. The results of this study are expected to encourage the Indonesian government to develop mental health programs during the COVID-19 pandemic.

Declarations

Author contribution statement

- E. Nugraheni: Conceived and designed the experiments.
- R. A. P. Geno: Performed the experiments.
- A. D. Laksono, H. Megatsari: Analyzed and interpreted the data; Wrote the paper.
- M. Ibad: Analyzed and interpreted the data.
- K. P. Sarweni, Y. T. Herwanto: Contributed reagents, materials, analysis tools or data.

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Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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