

C o n t e n t s

Preface	7
ADRIAN BEJAN, Diversity and nature.....	9
MIRCEA SCURTU, Constructal Law and Medicine Crises in Romania	13
DAN C. BACIU, SUNIT KAJAREKAR, MARCELO RISSO ERRERA, UMIT GUNES, 25 years of Constructal thinking: how global dissemination has grown from a single tree to a network of trees ...	17
SHIGEO KIMURA, YOICHI UTANOHARA, Analysis of heat transfer to a sheet-type heat exchanger placed in running water-thermal energy extraction from irrigation water.....	21
YONGJIAN GU, Complete formulas developed to calculate the entropy changes of ideal gases.....	25
ALEXANDRU M. MOREGA, MIHAELA MOREGA, Constructal couplings in the electropermeabilization of the cell membrane.....	29
AYDOGAN IBIS, Prevention of earthquakes and global warming, designing in the nature, new structural models, design methods and sustainable architecture and engineering.....	33
UMBERTO LUCIA, GIULIA GRISOLIA, Definition of time: from the Second to Constructal Law.....	37
MATEI C. IGNUTA-CIUNCANU, PHILIP TABOR, RICARDO F. MARTINEZ-BOTAS, Constructal Law, biomimicry, and topology optimization through the lens of generative AI	41
PETER VADASZ, Solutions of Newtonian gravitational waves and gravitational Poynting vector.....	45
ALBERT T. MAGNELL, Constructal evolution of genetic coding systems	47
KEENA GAO, Fountain of lights – constructal cascades	51
MOHAMMAD REZA HAJMOHAMMADI, UMBERTO LUCIA, GIULIA GRISOLIA, MOHAMMAD GHAREKHANI, Optimal design of constructal conductive pathways using machine learning algorithms	53
SAMUEL SAVITT, Optimizing formation flight design <i>via</i> the Constructal Law.....	57
PETER VADASZ, Quantum Mechanics – Deterministic <i>vs</i> Probabilistic.....	61
SERAFIM GREGORY SCURTU, MIRCEA SCURTU, Constructal Law and the OGP optimal global pricing technology	65
UMUT EGE SAMANCIOĞLU, ERDAL ÇETKIN, Investigation of phase change material (PCM) with/without Aluminum plate for battery thermal management	69
TERRY BRISTOL, Distinguishing motion and work in mechanics and engineering thermodynamics	73
GÜLŞAH YARIMCA, ERDAL ÇETKIN, Semi-empirical cycling aging models with enhanced accuracy for a NMC cell.....	75
LAZAROS MAVROMATIDIS, Architectural ingenuity and the Constructal Law: unleashing Maxwell's demons.....	77
CHRISTINE BIZZELL, Liberate human strength & life	81
VENTSISLAV D. ZIMPAROV, MILCHO S. ANGELOV, VALENTIN M. PETKOV, Maximum benefits from the use of <i>T</i> -shaped tree flow geometry with rectangular shape of the channels: performance evaluation	85
MIGUEL R. OLIVEIRA PANÃO, Informational perspective on ramifications in constructal design.....	89
AHMED M. BUKAR, ADULRAHMAN S. ALMERBATI, Enhanced electronic cooling using rectangular fin heat sinks: a comparative analysis	93
ELSIE (M. GOTTHMAN), Forgotten principles: how the digital age transformed the human connection to photography	97
ALOÍSIO LEONI SCHMID, ALEXANDRE BESSA MARTINS ALVES, ALEXANDRE RUIZ DA	

ROSA, MARCELO RISSO ERRERA, GEORGE STĂNESCU, Enhancing energy access by earth-air heat exchanger for buildings' thermal comfort by the constructal design	101
CHAIANAN SAILABADA, CRISTOFER HOOD MARQUES, JOSE V.C. VARGAS, JUAN ORDOÑEZ, Enhancing energy access by earth-air heat exchanger for buildings' thermal comfort by the constructal design	105
JUAN ORDONEZ, CAMILO ORDONEZ, Robotic legs design – constructal considerations	109
JOHN MULLALY, Universal dynamics: A theory of everything without inventing anything	113
KAMAL MOHAMED ALI NAYEL, ABDULRAHMAN S. ALMERBATI, Optimizing volumetric solar air receivers: numerical analysis of porosity and flow effects on temperature distribution	117
MARCUS PEREIRA, JEFERSON SOUZA, JOSÉ V.C. VARGAS, DIOGO PITZ, JUAN ORDONEZ, VANESSA KAVA, Finned elliptic tubes heat exchangers in the turbulent regime constructal design	121
MARCELO RISSO ERRERA, EMILIO GRACILIANO FERREIRA MERCURI, GEORGE STANESCU, Constructal design approach for carbon dioxide adsorption systems	125
VANESSA KAVA, JOSÉ V.C. VARGAS, JUAN ORDONEZ, ANDRÉ MARIANO, The eukaryote endosymbiotic origin: a constructal theory-based explanation.....	129
ADINEL GAVRUS, Constructal Law applied to proof maximum work principle. Consequences on convexity and normal rule of bulking plasticity & surface friction potential together with estimation of real thermo-mechanical power during continuum media flows	133
ANTÓNIO HEITOR REIS, Evolutionary patterns of leaves: palaeobotany and Constructal Law.....	137
MIGUEL R. CLEMENTE, Turbulent multi-branching radial symmetric flow structures.....	141
GEORGE STANESCU, JENI VILAG, VALERIU VILAG, ENE BARBU, A low-impact high-efficiency Brayton cycle concept with evaporative cooling during the compression process using H ₂ /CH ₄ fuel blends.....	145
MIRCEA SCURTU, ELMOR L. PETERSON, Constructal Law leads to discovery of the Fundamental Law in Economics	149
PAUL CIZMAS, Fluid modes, deep learning, and Constructal Law.....	153
ÇELIK KURTOĞLU, Upgrading along the value chain: conformity between helices	157
UMIT GUNES, Evolution of maritime technology: advancements in ship design	161
ALIN A. DOBRE, ANDREEA MITROFAN, ALEXANDRU M. MOREGA, Flux-flow interaction in electromagnetic bioimpedance	167
SHIVA ZIAEI, Constructal design of latent heat storage systems	171
YELDA VELİ, FLORIN SĂFTOIU, ALEXANDRU M. MOREGA, Interaction of ultrasonic and heat flow in essential oil extraction – a constructal glimpse	175
MOHAMMAD OLFATI, AMIR NEKOUNAM, The lungs of pleasure are full of death Oxygen	179
AMIR NEKOUNAM, MOHAMMAD OLFATI, Constructal Law and free economic market.....	181