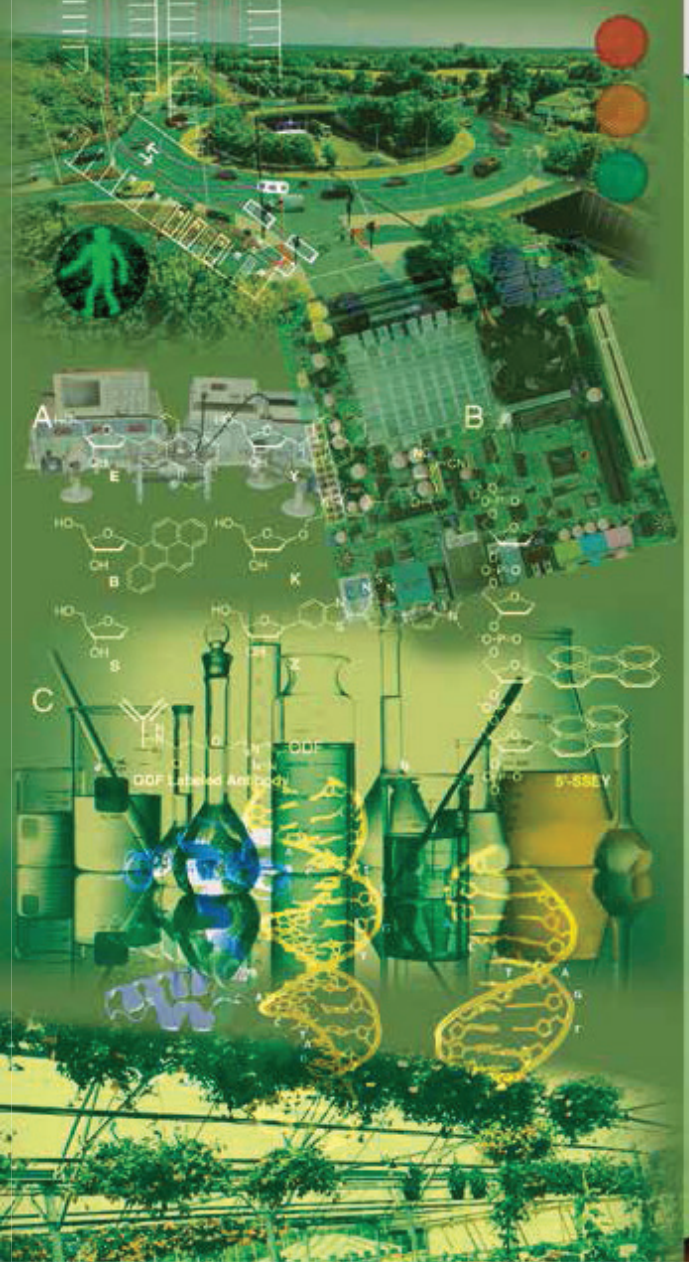
Our environment
Our future
Science and technology for
Rebuilding Kerala

31st KERALA SCIENCE CONGRESS

02-03 February, 2019
Fatima Mata National College, Kollam

Abstracts





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ABSTRACTS

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02-03 February, 2019 Fatima Mata National College, Kollam

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Editor -in- Chief
Dr. S. Pradeep Kumar

Organized by

KSCSTE - JNTBGRI

31ST KERALA SCIENCE CONGRESS - ABSTRACTS

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Our Environment – Our Future: Science and Technology for Rebuilding Kerala

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CONTENTS

Code No.	Title	Page No.
01. AGRICULTURE & FOOD SCIENCE		
Best Paper		
01-01	MANAGEMENT OF PAPAYA RINGSPOT VIRUS: THE DEADLIEST PATHOGEN EMERGING IN KERALA	1
01-02	MULTIMECHANISTIC PLANT PROBIOTIC FEATURES OF *BACILLUS* SPP. ISOLATED FROM RHIZOSPHERE OF *CLERODENDRUM INFORTUNATUM* L.	2
01-03	MICROBIAL QUALITY ANALYSIS AND STANDARDIZATION OF FRUIT ENRICHED RICE BASED PROBIOTIC YOGURT	2
01-04	BIOEFFICACY AND SOIL HEALTH IMPACT OF FLUCETOSULFURON IN WET SEEDED RICE	2
01-05	GENE PYRAMIDING FOR BACTERIAL BLIGHT RESISTANCE IN RICE VARIETY UMA	3
Oral Presentation		
01-06	EFFECT OF MICRONUTRIENT APPLICATION ON GROWTH AND YIELD OF OKRA IN TYPIC USTIPSAMMENTS OF KERALA	4
01-07	IN VITRO EVALUATION OF PLANT BENEFICIAL ATTRIBUTES OF TOMATO - ASSOSCIATED RHIZOBACTERIA	4
01-08	NUTRIENT STICK – A COMPLETE CROP FERTILIZER FOR FUTURE	5
01-09	IMPACT OF PROJECTED CLIMATE CHANGES ON WATER BALANCE AND WATER REQUIREMENTS OF MAJOR CROPPING SYSTEMS IN KOLE LANDS	5
01-10	EFFECT OF ORGANIC MANURES AND BIOFERTILIZERS ON PLANT AND SOIL NUTRIENT STATUS UNDER PAPAYA CULTIVATION (*CARICA PAPAYA* L.)	6
01-11	ECO-FRIENDLY MANAGEMENT OF ROOT-KNOT NEMATODE IN PEPPER USING *ANDROGRAPHIS PANICULATA* DRY POWDER	6
01-12	YIELD STABILITY ANALYSIS OF HEDGE LUCERNE GENOTYPES (*DESMANTHUS VIRGATUS* L. WILLD)	7
01-13	CROP NUTRITIONAL RESILIENCE AS AN INTEGRAL PART OF SOIL AMELIORATION FOR ENHANCED FRUIT YIELD AND QUALITY IN PAPAYA (*CARICA PAPAYA* L.) : AN EMERGING NUTRACEUTICALLY IMPORTANT FRUIT CROP OF KERALA	7
01-14	HYPERSPECTRAL SIGNATURES FOR MODELING PLANT PIGMENTS AND VEGETATIVE INDICES OF DIFFERENT PADDY CULTIVARS AS A TOOL IN PRECISION FARMING	8
01-15	STANDARDISATION OF PROCESS PROTOCOL FOR OSMO-CONVECTIVE DRIED PINEAPPLE	8
01-16	PATHOGENICITY OF *RHABDITIS*, A NATIVE ENTOMOPATHOGENIC NEMATODE AGAINST TERMITE	9
01-17	NON-WOVEN FABRIC WRAP: A NEW INTERVENTION TO SUPPRESS WHITE STEM BORER (*XYLOTRECHUS QUADRIPES*, CHEV.) POPULATION IN COFFEE PLANTATIONS	10
01-18	COMPARATIVE ANALYSIS OF DIOSGENIN CONTENT IN TWO SELECTED VARIETIES OF DIOSCOREA SP.	10
01-19	GREEN SYNTHESIZED ZINC OXIDE NANOPARTICLES AS NUTRIENT SOURCE FOR MAIZE (*ZEA MAYS* L.)	11
01-20	CALLUS REGENERATION FROM LEAF SHEATH EXPLANTS OF SILK BANANA 'POOVAN' (AAB)	11
01-21	GOOD AGRICULTURAL PRACTICES FOR QUALITY RAW DRUG PRODUCTION IN BRAHMI (*BACOPA MONNIERI*)	12
01-22	*IN VITRO* SCREENING OF SELECTED ZINGIBERALES FOR ANTIOXIDANT, ANTIFUNGAL, ANTHELMINTIC AND CYTOTOXIC ACTIVITIES	12
01-23	MOLECULAR CHARACTERIZATION OF BANANA BUNCHY TOP VIRUS IN KERALA ISOLATES	13
Poster presentation		
01-24	CHARACTERIZATION AND COMPARISON OF NANOBIOSENSOR FOR THE DETECTION OF BANANA BUNCHY TOP VIRUS	13
01-25	ANTIOXIDANT POTENTIAL IN RELATION TO PHENOLICS AND PIGMENTS ISOLATED FROM SOME SELECTED LANDRACES OF *DIOSCOREA ALATA* L.	14
01-26	STABILITY AND COLOR CHARACTERISTICS OF ANTHOCYANINS, ISOLATED FROM *DIOSCOREA ALATA* L., AS A NATURAL FOOD COLOURANT	14

01-27	EVALUATION OF RED *AMARANTHUS* GENOTYPES (*AMARANTHUS TRICOLOR* L.) UNDER WATER STRESS CONDITION	15
01-28	EVALUATION OF ROS CYCLE AND TOLERANCE MECHANISM IN *SESAMUM ORIENTALE* L. AGAINST *ALTERNARIA SESAMI*	15
01-29	PROFITABILITY OF LOWLAND CASSAVA CULTIVATION AS INFLUENCED BY SOURCES OF ORGANIC MANURE AND N AND P LEVELS	16
01-30	PROFITABILITY OF TANNIA CULTIVATION AS INFLUENCED BY TILLAGE SYSTEM SOIL CONDITIONER AND NUTRIENT MANAGEMENT	16
01-31	VEGETABLE INTERCROPPING SYSTEM UNDER FERTIGATION	17
01-32	A STUDY ON THE ENTREPRENEURIAL BEHAVIOUR OF LEASE LAND VEGETABLE GROWERS IN THIRUVANANTHAPURAM DISTRICT	17
01-33	NUTRIENT ANALYSIS OF *PSIDIUM GUINEENSE* SW. (MYRTACEAE) - AN UNDERUTILIZED EDIBLE FRUIT FOUND IN KERALA.	18
01-34	VALUE - ADDED PRODUCTS FROM JACKFRUIT AND PAPAYA FOR FOOD SECURITY AND SUSTAINABLE DEVELOPMENT	19
01-35	PHYSICOCHEMICAL EVALUATION OF THE FRUITS OF CULINARY MELON AND SNAP MELON	19
01-36	PERFORMANCE EVALUATION OF GINGER (*ZINGIBER OFFICINALE* ROSC.*)* VARIETIES UNDER ORGANIC NUTRITION : AN ECO FRIENDLY APPROACH TO AMELIORATE SOIL NUTRITION AND MAINTAIN SOIL SUSTAINABILITY	20
01-37	POST HARVEST TREATMENT WITH SALICYLIC ACID TO IMPROVE PHYSICAL QUALITIES OF NENDRAN BANANA DURING STORAGE	20
01-38	SEED PRIMING AND PGPR MIX-1 NUTRITION ON THE YIELD OF UPLAND RICE	21
01-39	ANTIOXIDANT POTENTIAL IN RELATION TO PHENOLICS AND PIGMENTS ISOLATED FROM SOME SELECTED LANDRACES OF *DIOSCOREA ALATA* L.	21
01-40	BACTERIAL BROOD DISEASE MANAGEMENT OF HONEY BEES (*APIS CERANA INDICA* FAB.) USING BOTANICALS	22
01-41	ENHANCING SEED LONGEVITY IN VEGETABLE SEEDS USING FILM COAT TECHNIQUE	22
01-42	PROCESS OPTIMISATION OF A PROBIOTIC CEREAL BASED FERMENTED PRODUCT USING L. CASEI ISOLATED FROM PROBIOTIC MILK DRINK	23
01-43	A REFINED MEDIUM FOR RAPID MULTIPLICATION OF *DENDROBIUM* HYBRIDS	23
01-44	ENHANCEMENT OF RICE YIELD IN KUTTANAD THROUGH SOIL AMELIORATION AND SUPPLEMENTARY FOLIAR NUTRITION	24
01-45	COMPARATIVE PHYTOCHEMICAL ANALYSIS OF SEED OILS IN FOUR ANNONA SPECIES	24
01-46	IMPACT OF AGRICULTURAL PRACTICES IN TRIGGERING FLOOD DAMAGE AND ITS POTENTIAL SCOPE IN REDUCING THE SAME	25
01-47	GENE ACTION FOR SEED SHATTERING IN RICE (*ORYZA SATIVA* L.)	25
01-48	IMPACT OF PRE - STORAGE SEED INVIGORATION AND PERIOD OF THAWING ON SEED LONGEVITY IN ASH GOURD (*BENINCASA HISPIDA* (THUNB.) COGN.) SEEDS.	26
02. BIOTECHNOLOGY		
Best Paper		
02-01	GENETIC AND BIOCHEMICAL BASIS OF PEST RESISTANCE BY A DIPLOID *MUSA* CULTIVAR AGAINST BANANA PSEUDOSTEM BORER AND PROSPECTS FOR PEST MANAGEMENT	26
02-02	ECO-FRIENDLY GREEN INHIBITION OF MILD STEEL CORROSION IN ACIDIC ENVIRONMENT BY *TAMARINDUS INDICA* LEAF EXTRACT	27
02-03	CHARACTERIZATION OF BIOTIC AND ABIOTIC STRESS TOLERANT ENDOPHYTE BY PHENOMIC AND GENOMIC APPROACH FOR PLANT PROBIOTIC FUNCTION AND ENHANCED AGRICULTURAL PRODUCTIVITY	27
Oral presentation		
02-04	DEVELOPMENT OF AN EFFECTIVE SYSTEM FOR OVER EXPRESSION AND MOLECULAR CHARACTERIZATION OF EFFICIENT EXO-B-1,4-GLUCANASE AND ENDO - B - 1, 3 - GLUCANASE ISOLATED FROMSTREPTOMYCES SPP.	28
02-05	POLYSACCHARIDE - GOLD NANOCLUSTERS AS PROFICIENT GREEN SIGNALING AGENT IN SOLID TUMOR DETECTION	29

02-06	PRODUCTION OF POLYHYDROXYBUTYRATE BY *BACILLUS MEGATERIUM* TBGSP1	29
02-07	MECHANISTIC EVALUATION OF CHITOSAN / BIOGENIC SILVER NANOPARTICLE CONJUGATE ON TUMOUR CELL LINES BY *IN VITRO* METHODS	30
02-08	PHYTOCHEMICAL AND BIOLOGICAL EVALUATION OF TROPICAL GREEN SEAWEEDS	31
02-09	PRODUCTION OF BIOPLASTIC - POLY (3 - HYDROXYBUTYRATE) IN RECOMBINANT *ESCHERICHIA COLI*	31
02-10	ANTIMICROBIAL ACTIVITY OF A NEW ENTOMOPATHOGENIC BACTERIA *ACINETOBACTER*	32
02-11	EVALUATION OF THE ROLE OF PAX6 IN RETINAL AXONAL GUIDANCE	32
02-12	BIO - INSPIRED ZNS QUANTUM DOT AS EFFICIENT PHOTO CATALYSTS FOR THE DEGRADATION OF METHYLENE BLUE IN AQUEOUS PHASE	33
02-13	A SPLICING FACTOR RBM10 CONTROLS 3'UTR PROCESSING TO REGULATE CARDIAC HYPERTROPHY	33
02-14	THE HIPPO PATHWAY EFFECTOR, YAP REGULATES CELL PROLIFERATION AND SURVIVAL IN BREAST CANCER CELLS.	34
02-15	MICROBIAL PRODUCTION OF BIOPOLYMERS FROM COIR WASTE USING *BACILLUS SUBTILIS*	34
Poster presentation		
02-16	ISOLATION OF PEPTIDES WITH ANTIMICROBIAL ACTIVITY FROM BLACK FIN SEA CAT FISH, *ARIUS JELLA*	35
02-17	NEXT GENERATION SEQUENCING AND ANALYSIS OF VIRAL DIVERSITY AT THE INNER ZONE OF KONGSFJORDEN, ARCTIC	36
02-18	PRELIMINARY STUDY ON THE SCREENING AND IDENTIFICATION OF DEHP DEGRADING BACTERIA ISOLATED FROM KOLLAM	36
02-19	IDENTIFICATION AND CHARACTERIZATION OF AN ANTILIPOPOLYSACCHARIDE FACTOR AND CRUSTIN FROM SPECKLED SHRIMP *METAPENAEUS MONOCEROS*	37
02-20	NMR BASED METABOLITE PROFILING OF ELICITOR TREATED CALLUS CULTURES OF *MUCUNA PRURIENS*. L ON CATECHOLAMINE BIOSYNTHESIS PATHWAY WITH EMPHASIS ON L - DOPA PRODUCTION	37
02-21	ANTICANCER AND ANTIBIOTIC EXTRACTS FROM INTERTIDAL MACROALGAE ASSOCIATED HETEROTROPHS	38
02-22	STATISTICAL EVALUATION OF MEDIUM COMPONENTS FOR EXTRACELLULAR PROTEASE PRODUCTION BY *PENICILLIUM GOETZII* MF151170 USING RESPONSE SURFACE METHODOLOGY	38
02-23	MICROPROPAGATION, SYNSEED PRODUCTION AND CYTOCHEMICAL ANALYSIS OF *AERVA LANATA* JUSS.	39
02-24	DEVELOPMENT OF SSR MARKERS FOR DASHEEN MOSAIC DISEASE RESISTANCE USING BIOINFORMATICS TOOLS.	39
02-25	EXTRACTION OF ANTIMICROBIAL PIGMENT FROM *PSEUDOMONAS AERUGINOSA* ISOLATED FROM SEA WATER	40
02-26	MOLECULAR CHARACTERIZATION OF A HISTONE DERIVED PEPTIDE FROM THE MALABAR TREVALLY, *CARANGOIDES MALABARICUS*	41
02-27	TARGETED DISRUPTION OF SURVIVAL SIGNALING: AN EFFICIENT INTERVENTIONAL APPROACH TO REVERSE TUMOR RESISTANCE AND RECURRENCE	41
02-28	PRE CLINICAL EVALUATION OF THE CHEMOTHERAPEUTIC EFFECT OF KAEMPFERIDE AGAINST CERVICAL CANCER	42
03 - CHEMICAL SCIENCES		
Best Paper		
03-01	A NOVEL ZINC-CATALYZED SUZUKI-TYPE CROSS-COUPLING REACTION OF ARYL BORONIC ACIDS WITH ALKYNYL BROMIDES	43
03-02	PREPARATION AND CHARACTERIZATION OF NOVEL POLYMER SUPPORTED METAL CATALYSTS AND ITS APPLICATIONS IN COUPLING REACTIONS	43
03-03	N - RICH ZEOLITE LIKE METAL ORGANIC FRAMEWORK (*SOD*-ZMOF): REVERSIBLE THERMOCHROMISM AND ANION TRIGGERED METALLOGELATION	44
03-04	PHOTOLUMINESCENCE PROPERTIES OF PARA - AMINOBENZOIC ACID COMPLEXES OF EU^{3+} AND TB^{3+} ENCAPSULATED IN ZEOLITE Y	44

03-05	NIR - II MOLECULAR PROBE AS CONTRAST AGENT FOR PHOTOACOUSTIC IMAGING	45
Oral Presentation		
03-06	GRAPHENE QUANTUM DOT - PORPHYRIN NANOCONJUGATES FOR PHOTODYNAMIC THERAPY	45
03-07	A CATALYST-FREE, ECO-FRIENDLY PROTOCOL FOR THE SYNTHESIS OF 2, 3 - DIHYDRO - 1H - PERIMIDINES "ON WATER"	46
03-08	CHITIN NANO WHISKER - NATURAL RUBBER NOVEL COMPOSITES FOR GREEN TIRES: SYNTHESIS, CHARACTERIZATION AND PROPERTY EVALUATION	47
03-09	ISOLATION OF CELLULOSE NANO WHISKERS (CNW) FROM COUNTRY ALMOND SHELL (CAS) AND DEVELOPMENT OF THEIR BIOCOMPOSITES.	47
03-10	MOLECULARLY IMPRINTED CONDUCTING POLYMER FOR ELECTROCHEMICAL SENSING OF CHLORPYRIFOS	48
03-11	A COMPETENT ZN (II) - BINOL CATALYTIC SYSTEM FOR C - S CROSS-COUPLING REACTIONS	49
03-12	RECOGNITION OF AL^{3+} ION VIA TRANSMETALATION OF NI (II) BASED BICOMPARTMENTAL SALEN SCHIFF BASE COMPOUNDS	49
03-13	STRUCTURAL INSIGHTS, SPECTRAL ASPECTS AND *IN VITRO* CYTOTOXICITY OF A ONE DIMENSIONAL COPPER(II) COORDINATION POLYMER	50
03-14	CONDUCTIVITY STUDIES OF POLYBUTYL METHACRYLATE (PBMA) BASED NANOCOMPOSITES USING CEO_2 NANOPARTICLES	50
03-15	SOLVENT FREE SYNTHESIS OF SPIROPYRROLIDINONES	51
03-16	A COST EFFECTIVE AND FACILE METHOD TO SYNTHESIZE BEADLESS POLYCARBONATE NANOFIBERS AND FURTHER MODIFICATION USING SURFACE COATED SEMICONDUCTOR NANOPARTICLES	51
03-17	STUDIES ON OIL RESISTANCE AND BIODEGRADABILITY OF COMPOSITES FROM CHICKEN FEATHER FIBRE AND ACRYLONITRILE BUTADIENE RUBBER	52
03-18	LUMINESCENT POLY (VINYL ALCOHOL) COMPOSITES CONTAINING SULPHUR - DOPED GRAPHENE QUANTUM DOTS FOR ULTRA SENSITIVE DETECTION OF ENVIRONMENTAL POLLUTANTS	52
03-19	SYNTHESIS, SPECTRAL STUDIES, CRYSTAL STRUCTURE AND *IN SILICO* MOLECULAR DOCKING OF THIOSEMICARBAZONE CU(II) COMPLEX	53
03-20	DEVELOPMENT OF COBALT NICKEL BASED METAL ORGANIC FRAMEWORK FOR PHOTOCATALYTIC HYDROGEN EVOLUTION	54
03-21	POLY(P-AMINO HYDROXYL NAPHTHALENE SULPHONIC ACID) MODIFIED ELECTROCHEMICAL SENSOR FOR THE SIMULTANEOUS DETERMINATION OF XANTHENE AND HYPOXANTHENE	54
03-22	SYNTHESES, SPECTRAL ASPECTS AND BIOLOGICAL STUDIES OF BROMIDE AND AZIDE BRIDGED BOX DIMER COPPER (II) COMPLEXES OF NNO DONOR AROYLHYDRAZONE	55
03-23	SYNTHESIS OF NOVEL MECHANORESPONSIVE AND SELF - HEALABLE POLY(METHYL METHACRYLATE) INCORPORATING STRATEGICALLY POSITIONED ANTHRACENE-BISMALEIMIDE DIELS - ALDER ADDUCT DERIVED MECHANOPHORE THROUGH SINGLE ELECTRON TRANSFER - LIVING RADICAL POLYMERIZATION (SET - LRP) UNDER AMBIENT CONDITIONS.	55
Poster Presentation		
03-24	METAL FREE MODIFICATION ON Ag_3VO_4 PHOTOCATALYST FOR AUGMENTED SUNLIGHT INDUCED DEGRADATION OF ORGANIC POLLUTANTS IN WATER	56
03-25	NOVEL SYNTHESIS OF IMIDAZO [1,2-a] PYRIDINES *via* Fe(III)-IODIDE CATALYZED ORTOLEVA-KING - TYPE REACTION	57
03-26	A NOVEL LIGAND - FREE MANGANESE-CATALYZED C-O COUPLING PROTOCOL FOR THE SYNTHESIS OF BIARYL ETHERS	57
03-27	MICROWAVE ASSISTED SYNTHESIS OF INTERNAL ALKYNES USING COPPER - CATALYZED SUZUKI TYPE COUPLING REACTIONS	58
03-28	FABRICATION OF SOLID STATE DYE SENSITIZED SOLAR CELL WITH CARBAZOLE BASED HOLE TRANSPORTING MATERIAL	59
03-29	DESIGN AND EVALUATION OF STRUCTURAL AND *IN VITRO* CHARACTERIZATION OF CHITOSAN FUNCTIONALIZED LAYERED DOUBLE HYDROXIDE NANOCOMPOSITE: A VERSATILE NANOCOMPOSITE FOR DUAL RESPONSIVE ANTICANCER DRUG DELIVERY	63

03-30	NEW MOLYBDENUM DIOXIDO COMPLEX INCORPORATING N(4) - (3 - METHOXYPHENYL) THIOSEMICARBAZONE: SYNTHESIS, CRYSTAL STRUCTURE, OXO TRANSFER PROPERTIES AND CATALYTIC USE IN THE OXIDATION OF STYRENE THROUGH OXIDO - PEROXO MOLYBDENUM INTERMEDIATE	63
03-31	SYNTHESIS AND EVALUATION OF PHOTOPHYSICAL PROPERTIES OF AN OXADIAZOLE-PHENOTHIAZINE HYBRIDDONOR - ACCEPTOR SYSTEM	64
03-32	PLANARITY CONTROLS THE ULTRAFAST INTRA MOLECULAR SINGLET FISSION DYNAMICS IN PENTACENE DIMMERS	65
03-33	IRON - LOADED BIOCHAR AS A SUPER CAPACITORS	65
03-34	BIOSYNTHESIS OF CALCIUM OXIDE NANOPARTICLE AND ITS ANTIBACTERIAL ACTIVITY	65
03-35	THE CONTROLLED RELEASE STUDY OF THE ANTI-CANCEROUS DRUG 5 - FLUROURACIL FROM MODIFIED NATURAL CLAY	66
03-36	A NOVEL ELECTROCHEMICAL SENSOR FOR THE DETERMINATION OF MORPHINE BASED ON THE CONDUCTING POLYMER POLY (CTAB) / GRAPHENE OXIDE NANOCOMPOSITE.	66
03-37	POST-SYNTHETIC MODIFICATION OF KETONE BASED AROMATIC MICROPOROUS ORGANIC FRAMEWORKS FOR CARBON DIOXIDE CAPTURE	67
03-38	ANTIMICROBIAL LEUKOCYTE REMOVAL FILTER BASED ON ELECTROSPUN POLYMER HYBRID FIBRE FUNCTIONALIZED WITH NANOPARTICLES	67
03-39	DNA CONDENSATION THROUGH ORDERED ASSEMBLY OF FULLERENE AMPHIPHILE	68
03-40	CONVENIENT SYNTHESIS OF PYRIDINE AND PYRIMIDINE DERIVATIVES USING PORPHYRIN CORED G1 PAMAM DENDRIMER AS HOMOGENEOUS CATALYST	68
03-41	A NOVEL NEUROTRANSMITTER SENSOR BASED ON METAL DOPED GRAPHENE - CHITOSAN COMPOSITE	69
03-42	CRYSTAL STRUCTURE AND SUPRAMOLECULAR INTERACTIONS IN NITRATE COMPLEXES OF SM(III) AND CE(III) WITH 5, 5' - DIMETHYL 2, 2' - BIPYRIDINE.	69
03-43	SILVER BASED NANOHYBRID AS AN EFFICIENT ELECTROCHEMICAL SENSOR AND PHOTOCATALYST	70
03-44	SYNTHESIS OF NOVEL ISOCHROMANS – PROMISING MOLECULES TO SHOW PLANT GROWTH REGULATING PROPERTIES	70
03-45	HPTLC QUANTIFICATION OF A NEUROTOXIC ACETOGENIN ANNONACIN IN DIFFERENT PARTS OF *ANNONA MURICATA*	71
03-46	FLUORESCENCE TURN ON SENSOR FOR CARBOFURAN BASED ON GRAPHENE QUANTUM DOT- MANGOSTEEN INTERACTIONS	71
03-47	ENHANCED FLUORESCENCE USING HOST-GUEST FORMATION ON SOLID SURFACES	72
03-48	WASTE HEAT TO ENERGY: THIOPHENE BASED SEMICONDUCTING OLIGOMERS FOR THERMOELECTRIC APPLICATIONS	72
03-49	THERMALLY INDUCED DYNAMIC SWITCHING OF SOLID - STATE LUMINESCENCE FOR SMART OPTOELECTRONIC DEVICE APPLICATIONS	73
03-50	YELLOW PHASE Δ-FAPBI$_3$ NANORODS – AN INSIGNIFICANT MATERIAL RENOVATES INTO VALUABLE RESISTIVE SWITCHING MEMORY DEVICE	73
04-EARTH & PLANETARY SCIENCES		
Best Paper		
04-01	CRUSTAL STRUCTURE ACROSS AND ALONG THE WESTERN GHATS: INSIGHTS FROM PS CONVERTED PHASES	74
04-02	SUBMERGENCE OF MUNROE ISLAND: QUANTIFIABLE INSIGHTS FROM SATELLITE BASED DINSAR TIME SERIES	74
04-03	INTENSIFICATION OF SOUTHWEST MONSOON OVER KERALA IN 2018: QUANTIFICATION AND MECHANISMS	75
04-04	GROUNDWATER-SEAWATER INTERACTION ALONG THIRUVANANTHAPURAM COAST, KERALA	76
Oral Presentation		
04-05	ROLE OF CHANGING DYNAMIC PARAMETERS IN CONTROLLING THE EXTREME EVENTS OVER PENINSULAR INDIA IN THE RECENT DECADES	76
04-06	MAJOR ION CONCENTRATION IN THE GROUNDWATER SOURCES OF BHAVANI RIVER BASIN (KERALA) - ITS IMPLICATIONS ON SILICATE WEATHERING	77

04-07	HYDROBIOLOGICAL CHARACTERISTICS AND COMMUNITY STRUCTURE OF MICROPHYTOPLANKTON ALONG THE SOUTH EASTERN ARABIAN SEA DURING EARLY SUMMER MONSOON	78
04-08	SOLUTE TRANSPORT THROUGH THE RIVERS DRAINING SILENT VALLEY AND ADJOINING REGIONS OF SOUTHERN WESTERN GHATS, INDIA	78
04-09	SPATIAL VARIATION OF RAINFALL Δ18O OVER PENINSULAR INDIA REFLECTING THE MOISTURE TRANSPORT MECHANISM DURING NORTHEAST MONSOON RAINFALL	79
04-10	IMPACT OF PENETRATING ELECTRIC FIELDS TO THE EQUATORIAL THERMOSPHERE-IONOSPHERE SYSTEM	79
04-11	*IN - SITU* AND MODELING INVESTIGATION OF LIGHT ABSORBING AEROSOLS OVER THE HIMALAYAS	80
04-12	RESPONSE OF EQUATORIAL AND LOW LATITUDE IONOSPHERE OVER INDIAN REGION TO A LONG DURATION MIDNIGHT M1.4 CLASS SOLAR FLARE	80
04-13	REGIONAL VARIABILITY OF SUMMER MONSOON RAINFALL OVER INDIA AND ITS ASSOCIATION WITH LOWER TROPOSPHERIC STABILITY	81
04-14	VOLUME ESTIMATION OF TILE/BRICK CLAY FROM IDENTIFIED SUITABLE SITES FOR MINING IN THRISSUR DISTRICT USING GEOSPATIAL TECHNIQUES	81
04-15	COMPUTATION OF SUBMARINE GROUNDWATER DISCHARGE USING RADON MASS BALANCE MODEL	82
04-16	SPATIAL DISTRIBUTION OF MESOZOOPLANKTON ALONG THE SOUTH EASTERN ARABIAN SEA DURING EARLY SUMMER MONSOON	82
04-17	GEOSPATIAL AND ANALYTICAL NETWORK PROCESS TOOL MIX FOR LANDSLIDE VULNERABILITY MAPPING IN KUTTIYADI RIVER BASIN, NORTHERN KERALA	83
04-18	A STUDY OF THE URBAN HEAT ISLAND IN A COASTAL CITY INTERLACED BY WETLANDS	84
04-19	MAPPING FLOOD AFFECTED AREAS ON GROUND IN ERNAKULAM, THRISSUR AND PALAKKAD DISTRICTS IN KERALA, INDIA	84
04-20	AN OPERATIONAL FRAMEWORK FOR MONITORING WEATHER AND CLIMATE FOR KERALA: DATA SOURCES, PROCESSING AND OUTCOME SHARING	85
04-21	MONITORING FLOOD AREAS USING MICROWAVE SATELLITE DATA - A CASE STUDY OF ALUVA TALUK - KERALA	85
Poster Presentation		
04-22	SUBSURFACE DIURNAL TEMPERATURE FLUCTUATIONS AND THERMAL CONDUCTIVITY AT A TROPICAL STATION	86
04-23	DIURNAL AND SEASONAL VARIABILITY OF SUBSURFACE HEAT FLUX AT A TROPICAL STATION	86
05-ENGINEERING & TECHNOLOGY		
Best Paper		
05-01	GROWTH AND CHARACTERIZATION OF MOLYBDENUM OXIDE NANORODS BY PULSED LASER ABLATION: ANNEALING INDUCED PHASE TRANSITION	87
05-02	COBALT PHTHALOCYANINE-BASED ORGANIC FIELD EFFECT TRANSISTORS FOR ULTRAVIOLET SENSOR APPLICATIONS	88
05-03	ULTRA FAST HEAT DISSIPATING AEROGELS DERIVED FROM POLYANILINE ANCHORED CELLULOSE NANOFIBERS AS EFFICIENT MICROWAVE ABSORBERS IN THE X BAND	88
05-04	AUTOMATION OF BANDWIDTH REDESIGN AND ITS APPLICATIONS IN AMPLIFIER TUNED OSCILLATORS BASED ON NULLORS	89
05-05	PVA / POLYPHOSPHORIC ACID MODIFIED MMT COMPOSITE: AN EFFECTIVE SOLUTION FOR WATER PURIFICATION	90
Oral Presentation		
05-06	EXPERIMENTAL STUDIES ON MECHANICAL PROPERTIES OF FIBER REINFORCED BITUMINOUS MIXES	90
05-07	DEVELOPMENT OF RING ROAD AND NMT CORRIDOR FOR AN EMERGING TOWN IN KERALA	91
05-08	PERFORMANCE ANALYSIS OF KSRTC DEPOTS IN THIRUVANANTHAPURAM CITY USING ANALYTICAL HIERARCHICAL PROCESS	92
05-09	IDENTIFICATION OF MAJOR FACTORS INFLUENCING WORK TRIPS IN THIRUVANANTHAPURAM CITY	92

05-10	IMPROVEMENT PROPOSAL FOR RECTIFICATION OF TRAFFIC PROBLEMS IN CONGESTED JUNCTIONS USING RING ROAD CONCEPT – A CASE STUDY OF KUNNAMKULAM JUNCTION IN THRISSUR DISTRICT	93
05-11	HOLOGRAPHIC RECORDING OF MICROSCOPIC IMAGES USING PHASE SHIFT INTERFEROMETRY	94
05-12	ENHANCED PEDESTRIAN DETECTOR USING FIRST ORDER AND SECOND ORDER AGGREGATED CHANNEL FEATURES	94
05-13	MODE CHOICE ANALYSIS OF WORKERS: A CASE STUDY FROM KOCHI CITY	95
05-14	STUDY OF USE OF INDUSTRIAL WASTE MATERIALS FOR DEVELOPMENT OF AERATED MASONRY BLOCKS	96
05-15	PARAMETRIC RESPONSE ESTIMATION OF DIAPHRAGM WALL BEHAVIOURS FOR OPTIMAL SYSTEM CONFIGURATIONS	96
05-16	MECHANICAL PROPERTIES OF CHICKEN FEATHER FIBRE REINFORCED NATURAL RUBBER BIOCOMPOSITES	97
05-17	ROBUST HAND POSTURE RECOGNITION USING SVM CLASSIFIER WITH GABOR AND DWT FEATURES	97
05-18	A COMPARISON OF PERFORMANCE OF MARGIN INFUSED RELAXED ALGORITHM AND SUPPORT VECTOR MACHINE ON THE TASK OF WORD SENSE DISAMBIGUATION FOR MALAYALAM	98
05-19	EVALUATION OF GROUNDWATER QUALITY AT CHAVARA, KOLLAM DISTRICT, KERALA USING GIS AND MODFLOW	98
05-20	SYNCHRONOUS GENERATOR EMULATION IN POWER ELECTRONIC CONVERTERS FOR IMPROVING THE GRID INERTIA	99
05-21	CHARACTERIZATION OF DC MAGNETRON SPUTTERED COPPER THIN FILM ON ALUMINIUM TOUCH SURFACE	99
Poster Presentation		
05-22	WHEN NATURE MEETS TECH: AUGMENTED REALITY FOR REBUILDING TOURISM AND HOSPITALITY	100
05-23	HIGHLY TOUGHENED NANOSTRUCTURED SELF ASSEMBLED THERMOSETS - AEROSPACE AND AUTOMOBILE APPLICATIONS	100
05-24	GEOPOLYMER: A SUBSTITUTE FOR PORTLAND CEMENT AND SOLUTION FOR DURABILITY ISSUES OF CONCRETE	101
05-25	DESIGN, CONSTRUCTION AND APPLICATION OF VARIABLE DUTY CYCLE OPTICAL CHOPPER	102
05-26	STRUCTURAL AND OPTICAL CHARACTERIZATION OF SOL - GEL SPIN COATED ZNO THIN FILMS	102
05-27	MECHANICAL, DIELECTRIC AND MORPHOLOGICAL CHARACTERIZATION OF HDPE-CHTIOSAN - HYDROXYAPATITE COMPOSITES FOR ORTHOTIC APPLICATIONS	103
05-28	FABRICATION OF FLEXIBLE, DISPOSABLE NANOCELLULOSE BASED SERS SUBSTRATES FOR TRACE LEVEL SENSING OF ENVIRONMENTAL CONTAMINANTS	103
05-29	A STUDY ON DRIVING BEHAVIOURAL ASPECTS OF GOODS VEHICLE DRIVERS	104
05-30	PHOTONIC CRYSTALS OF CORE-SHELL COLLOIDAL PARTICLES AS APTASENSOR FOR ENVIRONMENTAL MONITORING	104
05-31	STUDY OF SEASONAL VARIATIONS IN OPTICAL SIGNAL ATTENUATION DUE TO TROPOSPHERIC EXTINCTION	105
05-32	COMPARISON OF DIFFERENT CONTROL STRATEGIES AND ITERATIVE METHODS USED FOR IMPLEMENTATIONS OF A PHOTOVOLTAIC EMULATOR FOR MICROGRID APPLICATIONS	106
05-33	DATA DRIVEN DEPENDENCY PARSING OF MALAYALAM LANGUAGE	106
05-34	SAFE AND SECURE HOMES FOR KERALA	107
05-35	COMPARITIVE STUDY OF 3D - PRINTING AND CONVENTIONAL CONSTRUCTION PRACTICES	107
05-36	MALAYALAM PARTS OF SPEECH TAGGER	108
06 - ENVIRONMENTAL SCIENCE, FORESTRY & WILDLIFE		
Best Paper		
06-01	REDISCRIPTION OF THE BAGWORM MOTH *EUMETA CRAMERI* WESTWOOD (LEPIDOPTERA: PSYCHIDAE) WITH MORPHOLOGICAL AND MOLECULAR DATA FROM KERALA, INDIA	108

06-02	THREE - DIMENSIONAL RECONSTRUCTION OF TREES AND DIRECT ESTIMATION OF LEAF AREA INDEX OF A TROPICAL FOREST USING TERRESTRIAL LASER SCANNER LiDAR POINT CLOUD	108
06-03	UHLA PROCESS FOR THE EFFECTIVE UTILISATION OF IRON OXIDE WASTE FROM TITANIUM INDUSTRY	109
06-04	NAKED-EYE COLORIMETRIC SENSOR FOR THE DETECTION OF CYANIDE IONS IN AQUEOUS MEDIA USING GREEN SYNTHESIZED SILVER NANOPARTICLES	110
06-05	LINEAR INTRUSIONS AND NATURAL DISASTERS INCREASE SPREAD OF INVASIVE ALIEN SPECIES - A CASE STUDY FROM THE FORESTED LANDSCAPES OF CENTRAL KERALA.	110
Oral Presentation		
06-06	BIOREMEDIATION STUDY OF BIOSURFACTANT PRODUCING BACTERIAL BLOOM FROM OIL CONTAMINATED SITES AFTER FLOOD IN KERALA	111
06-07	THE IMPACT OF FLOOD ON MICROALGAE ALONG THE LOWER REACHES OF PERIYAR AND CHALAKKUDY RIVERS	111
06-08	AQUATIC BUGS (ORDER: HEMIPTERA) AS POTENTIAL BIOINDICATOR OF TWO DIFFERENT POND ECOSYSTEMS: A CASE STUDY	112
06-09	FOREST DEPENDENCE AND COMMUNITY WELL BEING IN PARAMBIKULAM TIGER RESERVE, KERALA	112
06-10	BIODEGRADATION OF CHLORPYRIFOS PESTICIDE USING AUTOCHTHONOUS *BACILLUS* CONSORTIUM	113
06-11	AN ALL KERALA STUDY CONDUCTED ON THE EFFECTS OF MOBILE TOWER AND MOBILE PHONE RADIATIONS ON HUMAN	113
06-12	APPLICATION OF UP - FLOW ANAEROBIC BIOFILTER AND HORIZONTAL FLOW SUBSURFACE CONSTRUCTED WETLAND IN KITCHEN GREYWATER TREATMENT	114
06-13	EFFECT OF PHYTOSYNTHESISED SILVEROXIDE NANOPARTICLES ON THE DEGRADATION OF AN ANIONIC DYE – COOMASSIE BRILLIANT BLUE	115
06-14	A DETAILED REDESCRIPTION OF *JAMIDES CELENO* (LYCAENIDAE, INSECTA) FROM A MORPHOLOGICAL, ANATOMICAL AND MOLECULAR PERSPECTIVE	115
06-15	A PRELIMINARY QUANTIFICATION OF THE MOTH ASSEMBLAGES IN HUMAN HABITATIONS IN AN URBAN AND RURAL AREA OF THRISSUR DISTRICT WITH EMPHASIS ON POST, PRE AND FLOOD SEASON	116
06-16	FATE OF PHOSPHORUS FRACTIONATION IN CORE SEDIMENTS OF MANGROVE ECOSYSTEM-MALIPPURAM, COCHIN, SOUTHWEST COAST OF INDIA.	116
06-17	AN ANALYSIS OF FUNCTIONAL FEEDING GROUPS OF BENTHIC MACROINVERTEBRATES IN BIOMONITORING OF PAMPA RIVER	117
06-18	ENVIRONMENTAL IMPACT OF MINING AND QUARRYING IN NETRAVATI-GURPUR RIVER BASINS: A GEO - ENVIRONMENTAL APPRAISAL	117
06-19	IMPACT OF FORESTRY PRACTICES ON PRIMARY NATURAL FORESTS IN THE WESTERN GHATS: A CASE STUDY FROM VAZHACHAL FOREST DIVISION, KERALA	118
06-20	ROLE OF TERMITES IN LIGNOCELLULOSIC WASTE MANAGEMENT	118
06-21	AN INTEGRATED APPROACH FOR RAW DRUG AUTHENTICATION IN *SARACA ASOCA*	119
06-22	ADAPTIVE PRIVATE ALLELES IN THE GEOGRAPHICALLY DISTINCT NATURAL TEAK POPULATIONS OF KERALA	119
06-23	SYNTHESIS AND CHARACTERIZATION OF NANO HYDROXY APATITE DECORATED CARBOXYL FUNCTIONALIZED GRAPHENE OXIDE / ZINC OXIDE NANOROD COMPOSITE FOR THE EFFECTIVE DEGRADATION OF CHLORPYRIFOS FROM AQUEOUS SOLUTIONS	120
06-24	PARMELIOID LICHENS OF KERALA, CURRENT STATUS AND NEED OF TAXONOMIC AND PHYLOGENETIC UPDATION OF THE FAMILY PARMELIACEAE	120
Poster Presentation		
06-25	ARECANUT AND COCONUT TREES, THE UNIQUE HOSTS PREFERRED BY EPIPHYTIC LICHENS IN LOWER ALTITUDE: A CASE STUDY FROM ERNAKULAM DISTRICT, KERALA	121
06-26	ANALYSIS OF ECO-PHYSIOLOGICAL AND ALLELOPATHIC EFFECTS OF TWO SPECIES OF REED BAMBOOS IN THE RESERVE FORESTS IN THIRUVANANTHAPURAM DISTRICT, KERALA.	121

06-27	ANALYSIS OF HEAVY METAL POLLUTION ON PARVATHY PUTHANAR, AN ARTIFICIAL RIVER CANAL IN THIRUVANANTHAPURAM DISTRICT, SOUTH KERALA	122
06-28	TRACKING BIODIVERSITY WITH CITIZEN SCIENCE - A CASE STUDY OF eBird IN KERALA	122
06-29	LOGISTIC REGRESSION MODEL AND TEMPORAL ACTIVITY PATTERN OF STRIPE - NECKED MONGOOSE OF SILENT VALLEY NATIONAL PARK	123
06-30	DEVELOPMENT OF AN INDEX FOR SOIL QUALITY ASSESSMENT OF MANGROVES IN KERALA	123
06-31	ZOOPLANKTONS AS INDICATORS IN THE SEASONAL ECOLOGY OF THREE PONDS OF ERNAKULUM DISTRICT OF KERALA	124
06-32	ECO-PHYSIOLOGICAL STUDIES IN RELATION TO HEAVY METAL CONTENT IN DIFFERENT STRATEGIC AREAS/PLANTS OF KADALUNDI VALLIKKUNNU COMMUNITY RESERVE	124
06-33	NOVELTIES FROM MATHIKETTAN SHOLA NATIONAL PARK, KERALA, INDIA	125
06-34	EVALUATION OF WATER QUALITY STATUS OF PARVATHY PUTHANAR CANAL, THIRUVANANTHAPURAM, KERALA, SOUTH INDIA	125
06-35	DETECTION OF WATER POLLUTION INDICATORS AND OTHER MULTIDRUG RESISTANT PATHOGENIC BACTERIA IN THE DRINKING WATER SOURCES OF CHENGANNUR AFTER FLOOD- A MAJOR THREAT	126
06-36	SOIL HEALTH STATUS OF SELECTED LAND USE SYSTEMS IN A REGION OF ACHENKOVIL WATERSHED, KOLLAM DISTRICT: A STUDY ON THE IMPACTS OF LAND USE AND MANAGEMENT	127
06-37	DIVERSITY AND DISTRIBUTION OF BIRDS IN MIDLAND LATERITIC BIOTOPES OF NORTHERN KERALA, INDIA	127
06-38	MACRO - PROLIFERATION OF THE BLACK BAMBOO, *GIGANTOCHLOA ATROVIOLACEA* WIDJAJA	128
06-39	TIO_2 - REDUCED GRAPHENE OXIDE NANOCOMPOSITE: A NOVEL CATALYST FOR SOLAR DECONTAMINATION OF WATER FROM DRUG POLLUTANTS	128
06-40	FOOD AND FEEDING HABITS OF SCHNEIDERS LEAF - NOSED BAT, *HIPPOSIDEROS SPEORIS* (SCHNEIDER, 1800) FROM PEECHI - VAZHANI WILDLIFE SANCTUARY	129
06-41	PHYCOREMEDIATION OF PULP AND PAPER MILL EFFLUENT USING *PLANKTOCHLORERLLA NUREKIS*	129
06-42	FLOOD INUNDATION ANALYSIS USING DEM AND LAND COVER MAP	130
07-FISHERIES & VETERINARY SCIENCES		
Best Paper		
07-01	SUPPLEMENTATION OF PROBIOTIC *PAENIBACILLUS POLYMYXA* HGA4C INDUCES MORPHOMETRIC, ENZYMATIC AND GENE EXPRESSION CHANGES IN A TELEOST FISH *OREOCHROMIS NILOTICUS*	130
07-02	NATURAL ANTIOXIDATIVE EXTRACTS FROM FRUIT PEEL WASTES FOR SEAFOOD PRESERVATION	131
07-03	EVALUATION OF RUMEN METAGENOME AND METHANE EMISSION LEVELS BETWEEN VECHUR AND CROSSBRED CATTLE OF KERALA	132
07-04	VALIDATION AND ASSOCIATION STUDIES OF SINGLE NUCLEOTIDE POLYMORPHISMS IDENTIFIED IN PROLIFICACY RELATED GENES OF GOATS USING DOUBLE DIGEST RESTRICTION ASSOCIATED DNA SEQUENCING	132
07-05	A COMPREHENSIVE APPROACH FOR DIAGNOSIS OF PORCINE LEPTOSPIROSIS: AN UNDER-REPORTED THREAT TO HUMANS	133
Oral Presentation		
07-06	BIODIVERSITY OF *PLAKOBRANCHIIDS* (GASTROPODA: PLAKOBRANCHIDAE) FROM SOUTH-WEST COAST OF INDIA	133
07-07	EFFECT OF VARYING DIETARY PROTEIN AND LIPID LEVELS ON GROWTH AND REPRODUCTIVE PERFORMANCE OF ORANGE CHROMIDE *ETROPLUS MACULATUS* (1795)	134
07-08	ANTIBIOTIC RESISTANCE AND VIRULENCE FACTORS OF *AEROMONAS* SPP. ISOLATED FROM DISEASED *XIPHOPHORUS HELLERII*	134
07-09	MOLECULAR PHYLOGENY OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS CIRCULATING IN KERALA	135

07-10	WHOLE MITOGENOME SCANS PROVIDE EVIDENCE FOR LOCALLY ADAPTED POPULATIONS OF INDIAN OIL SARDINE, *SARDINELLA LONGICEPS* IN THE INDIAN OCEAN	135
07-11	MOLECULAR CHARACTERIZATION OF ANTIVIRAL RADICAL-SAM PROTEIN VIPERIN HOMOLOGUE IN ASIAN SEA BASS (*LATES CALCARIFER*)	136
07-12	INFLUENCE OF TOMATO, LADIES FINGER AND SPINACH ON THE UTILIZATION OF INORGANIC NITROGEN IN MEDIA BASED EBB - AND - FLOW AQUAPONICS SYSTEM	137
07-13	EVALUATION OF TOTAL MIXED RATIONS CONTAINING UNCONVENTIONAL FEED INGREDIENTS IN CROSSBRED CATTLE	137
07-14	DEVELOPMENT OF SYNBIOTIC ICE CREAM FROM GOAT MILK	138
07-15	SEROPREVALENCE OF LEPTOSPIROSIS IN THRISSUR DISTRICT OF KERALA – A RETROSPECTIVE STUDY	138
07-16	MOLECULAR DETECTION OF INFECTIOUS BURSAL DISEASE VIRUS (IBDV) IN KERALA	139
07-17	MOLECULAR DETECTION OF ROTAVIRUS OF PIGS IN KERALA	140
07-18	A PRELIMINARY EVALUATION OF *SAUROPUS ANDROGYNOUS* (L.) MERRILL LEAF MEAL AS A PARTIAL REPLACEMENT OF FISH MEAL IN THE DIETS FOR PACIFIC WHITE SHRIMP, *LITOPENAEUS VANNAMEI* (BOONE, 1931)	140
07-19	EFFECT OF PHYTOADDITIVE COMBINATIONS ON CONTROL OF *MUSCA DOMESTICA* POPULATION IN POULTRY SHED	141
Poster presentation		
07-20	OCCURRENCE OF INTESTINAL LESIONS IN CHICKENS – A ONE - YEAR PROSPECTIVE STUDY IN PURE LINE CHICKENS	141
07-21	OCCURRENCE OF ESBL *ESCHERICHIA COLI* FROM LAYER BIRDS OF ORGANIZED POULTRY FARM IN WAYANAD DISTRICT, KERALA	142
07-22	MICROPLASTIC STATUS IN THE GUT CONTENT OF *MUGIL CEPHALUS* LINNAEUS, 1758 FROM POONTHURA ESTUARY, THIRUVANANTHAPURAM: BEFORE AND AFTER THE CYCLONE OCKHI	143
07-23	IMPACT OF FREQUENCY OF TRANS - VAGINAL OOCYTE RECOVERY AND REPEAT BREEDING ON YIELD AND QUALITY OF OOCYTES	143
07-24	OCCURRENCE OF *CAMPYLOBACTER* SPP. IN A PIG FARM IN THRISSUR DISTRICT	144
07-25	VACCINATION FAILURE AND OUTBREAK OF INFECTIOUS BURSAL DISEASE IN AN ORGANIZED POULTRY FARM	145
07-26	A MORPHOMETRIC STUDY OF SPECIES OF *AMBLYPHARYNGODON* BLEEKER, 1860 (TELEOSTEI: CYPRINIFORMES: CYPRINIDAE) FROM THE RIVERS OF WESTERN GHATS, KERALA.	145
07-27	BIOFILM DEVELOPMENT ON MUNDACKAL BEACH, KOLLAM, KERALA	146
07-28	LEPTOSPIROSIS IN CATTLE IN FLOOD AFFECTED AREA IN THRISSUR DISTRICT – A CASE REPORT	146
07-29	EFFECTS OF SALINITY AND WATER QUALITY PARAMETERS ON THE BREEDING AND LARVA REARING OF BLACK MOLLY *POECILIA SPHENOPS*	147
07-30	CANINE MAMMARY TUMOUR: HISTOPATHOLOGICAL VARIANTS	147
008 - HEALTH SCIENCE		
Best Paper		
08-01	DECIPHERING THE MOLECULAR EVENTS REGULATED BY TRYPTANTHRIN IN MELANOMA	148
08-02	ALGINATE DIALDEHYDE - GELATIN HYDROGEL SUBSTITUTE FOR MENISCAL REPAIR – A BOON TO ATHLETES AND LABOURERS	148
08-03	DEVELOPMENT OF A NOVEL HUMAN TISSUE DERIVED SKIN SUBSTITUTE AND PRECLINICAL EVALUATION IN ANIMAL WOUND MODELS	149
08-04	MYOCARDIAL CALCIUM - CALMODULIN - DEPENDENT PROTEIN KINASE II - DELTA (CAMKII-Δ) SIGNALING REGULATION THROUGH NRF2/HO-1 SIGNALING PATHWAY BY CLOVE OIL, EUGENOL	150
08-05	EXPLORATION OF NEW PHYTOCHEMICAL ENTITIES FROM *HYDNOCARPUS WIGHTIANA* BLUME EVOLVED AS POTENT ANTICANCER HITS INDUCING MITOCHONDRIA MEDIATED APOPTOSIS THROUGH CYT C RELEASE	150

Oral Presentation		
08-06	WHERE DO WE LAG? : ACHIEVING ELIMINATION OF MOTHER TO CHILD TRANSMISSION (EMTCT) OF HIV IN INDIA	151
08-07	PHENOLIC CHARACTERIZATION OF HOT PRESSED AND FERMENTED VIRGIN COCONUT OIL AND COMPARATIVE ASSESSMENT OF THEIR ANTI - INFLAMMATORY POTENTIAL	152
08-08	ELECTROCHEMICAL SENSING OF METHYLMALONIC ACID: FUNCTIONAL BIOMARKER OF VITAMIN B-12 STATUS	152
08-09	A HIGH THROUGHPUT SCREENING METHOD USING PBMC FOR DETECTING T CELL IMMUNE RESPONSE INTRODUCTION	153
08-10	*HIBISCUS ROSA SINENSIS* L. ANTHOCYANINS MODULATES DIABETIC DYSLIPIDEMIA IN STREPTOZOTOCIN INDUCED DIABETIC RATS	153
08-11	PROFILE OF GUT MICROBIAL DIVERSITY FROM HUMAN SUBJECTS IN KERALA - HEALTHY VERSUS DIABETIC	154
08-12	AN "*EX VIVO*" ENGINEERED HUMAN TUMOR MODEL FOR RAPID AND REAL - TIME CANCER DRUG DISCOVERY	154
08-13	STAR FRUIT AS A POTENTIAL ANTIOXIDANT	155
08-14	ENGINEERED BONE FOR LOAD BEARING APPLICATIONS	156
08-15	HEART MURMUR FOR DEFECT IDENTIFICATION – A FFT AND WAVELET STUDY	156
08-16	CHEMOTHERAPEUTIC LOADED POLYSACCHARIDE - METAL NANOFORMULATION FOR ANTI-GLIOMA THERAPY	157
08-17	EXPRESSION OF PD-L1 IN TRIPLE NEGATIVE BREAST CANCER: A POTENTIAL BIOMARKER FOR IMMUNOTHERAPY	157
08-18	THREE DIMENSIONAL CELL CULTURE SYSTEMS FOR IN SITU CYTOCOMPATIBILITY EVALUATION OF SELECT PHYTOCHEMICALS FOR NEURAL TISSUE ENGINEERING APPLICATIONS	158
08-19	EVALUATION OF ANTI INFLAMMATOTY ACTIVITY OF KOKILAKSHAM KASHAYAM ON RAW MACROPHAGE CELL LINE	158
08-20	SEX HORMONES INFLUENCE PAD4 ENZYME ACTIVITY	159
Poster Presentation		
08-21	ENHANCEMENT OF THE ANGIOGENENIC POTENTIAL OF A PORCINE CHOLECYST DERIVED SCAFFOLD BY COATING WITH CELL ADHESION MOLECULES FOR DIABETIC WOUND HEALING APPLICATION	159
08-22	A NEW INSIGHT ON EARLY DIAGNOSIS OF ALZHEIMER'S DISEASE BIOMARKERS BY LABEL BASED SERS IMMUNOSENSOR	160
08-23	STUDIES ON EMBELIN FLUORO DERIVATIVE AS POTENT B-RAF INHIBITOR IN MELANOMA	160
08-24	EFFECT OF *ROTULA AQUATICA* LOUR. IN AMELIORATION OF INFLAMMATION, OXIDATIVE STRESS AND RENAL DAMAGE ASSOCIATED WITH ACUTE PYELONEPHRITIS IN WISTAR RATS	161
08-25	A STUDY TO EVALUATE THE ASSOCIATION OF LIPID PEROXIDATION LEVELS AND OTHER RISK FACTORS IN THE DEVELOPMENT OF CORONARY ARTERY DISEASE (CAD)	161
08-26	CHOLECYST - DERIVED - GRAFT ASSISTED HEALING OF EXPERIMENTAL MYOCARDIAL INFARCTION IN A RAT MODEL	162
08-27	CATECHIN MODULATES AUTOPHAGY AND APOPTOSIS IN MIN6 CELLS EXPOSED TO HIGH GLUCOSE CONCENTRATION	162
08-28	AN EVALUATION OF DRINKING WATER QUALITY OF DUG WELLS IN KOLLAM DISTRICT	163
08-29	COGNITIVE EFFECTS OF ENDEMIC FLUOROSIS - A COMPARATIVE STUDY	163
08-30	CYTOPROTECTIVE ACTIVITY OF AMALAKI RASAYANA IN UV IRRADIATED HUMAN DERMAL FIBROBLASTS	164
08-31	A TRIO MODEL NANOTECHNOLOGICAL APPROACH FOR CANCER MANAGEMENT: GRAPHENE BASED PLASMONIC POLYMER ASSEMBLIES FOR MULTIMODAL IMAGING AND THERAPY	164
08-32	BIMODAL FLUORESCENCE-SERS ENCODED NANOCOCKTAIL FOR THE MULTIPLEX DETECTION OF LUNG CANCER BIOMARKERS	165
08-33	PROGNOSTIC SIGNIFICANCE OF ADDITIONAL CHROMOSOMAL ABNORMALITIES IN CML PATIENTS	165
08-34	IMPORTANCE OF COVENTIONAL CYTOGENETICS IN PEDIATRIC B LYMPHOCYTIC LEUKEMIA	166

08-35	*IN SILICO* PREDICTION AND THREADING BASED EPITOPE MAPPING OF LEPTOSPIRAL SURFACE ADHESION PROTEIN LSA46	166
08-36	PREVALENCE AND ANTIBIOTIC SUSCEPTIBILITY OF TRADITIONAL MEDICINAL PLANTS ON PATHOGENIC BACTERIA USING AGAR WELL DIFFUSION METHOD	167
08-37	REPRODUCTIVE HEALTH OF WOMEN IN COASTAL AREAS OF THIRUVANANTHAPURAM	167
08-38	ASSESSMENT OF ANTIOXIDANT, ANTIMUTAGENIC AND ANTIHEMOLYTIC POTENTIAL OF *CYNOMETRA TRAVANCORICA,* A SUBSTITUTE OF *SARACA ASOCA* IN ASOKARISHTA	168
08-39	CLINICO - EPIDEMIOLOGIC AND ENVIRONMENTAL FACTORS IN YOUNG ONSET PARKINSON'S DISEASE: A PROSPECTIVE STUDY	169
08-40	EGFR MUTATION ANALYSIS IN NSCLC: EXON 20 Q787Q POLYMORPHISM	169
08-41	HESPERIDINE NANOPARTICLE INCORPORATED ELECTROSPUN SCAFFOLDS FOR WOUND HEALING APPLICATIONS	170
09 - LIFE SCIENCES		
Best Paper		
09-01	*IN VITRO* CYTOTOXIC AND APOPTOTIC POTENTIAL OF PURIFIED TERPENOID OF *BRACHYTHECIUM BUCHANANII* (HOOK.) A. JAEGER IN MG63 OSTEOSARCOMA CELL LINES: A SEARCH	170
09-02	EFFECTIVE AMELIORATION OF LIVER FIBROSIS BY *TETRACERA AKARA* (BURM. F.) MERR., AN ETHNOMEDICINAL PLANT *VIA.* INHIBITING NF - KB SIGNALING PATHWAY AND HSC ACTIVATION - A NOVEL THERAPEUTIC APPROACH	171
09-03	POLYPHENOLS RICH *MURRAYA KOENIGII* LEAF EXTRACT EXERTS CARDIAC PROTECTION IN STREPTOZOTOCIN INDUCED DIABETIC RATS	171
09-04	SCREENING AND IDENTIFICATION OF CAMPTOTHECIN PRODUCING ENDOPHYTIC FUNGI FROM *OPHIORRHIZA MUNGOS*	172
09-05	A HIGH THROUGPUT APPRAOCH FOR CANCER DRUG SCREENING USING REDOX GFP AND FRET BASED PROBES OF CELL DEATH	172
Oral presentation		
09-06	LARVICIDAL EFFICACY AND MODE OF ACTION OF 22 - HYDROXYHOPANE FROM *ADIANTUM LATIFOLIUM* AGAINST *ORYCTES RHINOCEROS* (COLEOPTERA: SCARABAEIDAE)	173
09-07	PURIFICATION AND FRACTIONATION OF ANTHOCYANINS FROM SUSPENSION CULTURES OF *OSBECKIA ASPERA* L. AND *OSBECKIA RETICULATA* BEDD.	173
09-08	DOCUMENTATION AND QR CODE ENABLED DIGITIZATION OF TREE AND GARDEN FLORA OF KANAKAKKUNNU PALACE, THIRUVANANTHAPURAM –INDIA'S FIRST DIGITAL GARDEN IN PUBLIC PLACE	174
09-09	IRRIGATION REQUIREMENT USING CROPWAT MODEL AND ASSESSING THE INFLUENCE OF NUTRIENT MANAGEMENT AND METHOD OF PLANTING ON CROP AND WATER PRODUCTIVITY OF AEROBIC RICE	174
09-10	EFFECT OF BISPHENOL A ON THE PROTEIN TURNOVER REGULATING ENZYMES AND PROTEIN PROFILE IN THE MALE *DROSOPHILA ANANASSAE* (DOLESCHALL)	175
09-11	ANALYSIS OF GENETIC DIVERSITY IN *ANANAS COMOSUS* (L.) MERR HYBRIDS USING ISSR MARKER	175
09-12	POLYPHENOLIC COMPOUND AND ITS FREE RADICAL SCAVENGING POTENTIALITY OF WILD AND CULTIVARS OF *IMPATIENS BALSAMINA*	176
09-13	THE EFFECT OF RHEUMATOID ARTHRITIS SYNOVIAL FLUID ON THE TH17 / TREG RATIO IN A HEALTHY BLOOD SAMPLE	176
09-14	THE HISTOPATHOLOGICAL CHANGES IN THE GILL AND LIVER TISSUES OF FRESHWATER FISH, *LABEO ROHITA* EXPOSED TO MALATHION: PROTECTIVE ROLE OF CURCUMIN	177
09-15	ISOLATION AND CHARACTERIZATION OF AMENTOFLAVONE FROM TWO SPECIES OF *BIOPHYTUM* DC. (OXALIDACEAE)	177
09-16	GUT CONTENT ANALYSIS OF *PILA GLOBOSA* WITH DIGESTIVE ENZYMES - A COMPARATIVE STUDY	178
09-17	METAGENOMIC PROFILING OF MICROBIAL COMMUNITIES IN FLOOD - AFFECTED AREAS OF KUTTANAD	178
09-18	A STUDY ON THE INECTICIDAL POTENTIAL OF *ASPARAGUS RACEMOSUS* AGAINST RED PALM WEEVIL	179

09-19	PURIFICATION AND CHARACTERISATION OF AGARASE ENZYME FROM AGAROLYTIC BACTERIA ISOLATED FROM CORAL REEF ECOSYSTEMS	179
09-20	*IN VITRO* SHOOT MULTIPLICATION IN *BRUGUERA CYLINDRICA* W&A	180
09-21	BACTERIAL ISOLATION, HYDROLYTIC ENZYMES PRODUCTION AND ITS RELATION TO ORGANIC MATTER OF MANGROVE SEDIMENTS FROM NORTHERN KERALA	181
09-22	EFFECT OF ANTI - ETHYLENE COMPOUNDS ON HYPERHYDRICITY REVERSION AND MULTIPLICATION IN *DIANTHUS CHINENSIS* L	181
09-23	ROS DEPENDENT ENZYMATIC AND NON-ENZYMATIC ACTIVITIES DURING FLORAL MORPHOGENESIS IN *COCCINIA GRANDIS* (L). VOIGT (CUCURBITACEAE)	182
09-24	DROUGHT STRESS INDUCED CHANGES IN METABOLITE PRODUCTION AND ANTIOXIDANT ENZYME ACTIVITY IN *MOMORDICA CHARANTIA*	182
Poster presentation		
09-25	TWO NEW RECORDS OF BROWN ROT POLYPORES (AGARICOMYCETES, BASIDIOMYCOTA) FROM INDIA	183
09-26	BIOCHEMICAL ANALYSIS AND *IN SITU* LOCALIZATION OF REACTIVE OXYGEN SPECIES IN MULBERRY GENOTYPES	183
09-27	FIRST RECORD OF THE HALOPHILIC FUNGUS, *PENICILLIOPSIS CLAVARIIFORMIS* SOLMS (EUROTIOMYCETES, ASCOMYCOTA) ON *DIOSPYROS PANICULATA* DALZ. FROM INDIA	184
09-28	PURIFICATION, FRACTIONATION OF TERPENOIDS FROM *HYPNEA USCIFORMIS* BY GC - MS AND ANALYSIS OF ITS ANTIOXIDANT AND ANTI - INFLAMMATORY POTENTIALITIES	185
09-29	*IN VITRO* EVALUATION OF ANTI - INFLAMMATORY EFFECTS OF VARANADI KASHAYAM, A POLY HERBAL DECOCTION IN THP - 1 DERIVED MACROPHAGES	185
09-30	MOLECULAR DETECTION OF PATHOGENIC BACTERIA *PROTEUS MIRABILIS* CONTAMINATION IN CHICKEN MEAT	186
09-31	BISPHENOL A, A PLASTIC RESIDUE OF THE ECOSYSTEM INTENSIFIES MOSQUITO MENACE BY SHORTENING THE LIFE CYCLE SPAN	186
09-32	COMPARISON OF THE EXPRESSION PROFILE OF mRNA FROM YOUNG AND MATURE LEAVES OF *TECTONA GRANDIS* L F. BY DDRT ANALYSIS	187
09-33	ANATOMICAL STUDIES OF TWO *CALOTROPIS* L. (APOCYNACEAE) SPECIES	187
09-34	COMPARATIVE STUDY ON ANTIOXIDANT AND ANTIMICROBIAL ACTIVITY OF ESSENTIAL OIL FROM *POGOSTEMON BENGHALENSIS* (BURM.F.) KUNTZE. AND *P. CABLIN* (BLANCO) BENTH	188
09-35	CONNECTOME REGULATES ODOR ADAPTATION AT DIFFERENT THRESHOLDS IN *CAENORHABDITIS ELEGANS*	188
09-36	MOLECULAR CHARACTERIZATION OF HISTONE H2A - DERIVED ANTIMICROBIAL PEPTIDE, HIPPOSIN FROM INDIAN MAJOR CARP *CATLA CATLA*	189
09-37	ANTIBACTERIAL ACTIVITY OF THE ENDOPHYTIC FUNGI FROM THE MANGROVE PLANT, *AEGICERAS CORNICULATUM*	189
09-38	DNA BARCODING AND PHYLOGENETIC INFERENCE OF *CAREBARA DIVERSA* (HYMENOPTERA: FORMICIDAE) USING MITOCHONDRIAL CYTOCHROME OXIDASE I GENE SEQUENCE	190
09-39	MARINE ACTINOMYCETES AS ANTIVIBRIO AGENTS FOR APPLICATION IN SHRIMP CULTURE SYSTEM	190
09-40	THE EVOLUTION OF *ATROPHANEURA ARISTOLOCHIAE* AND *TROIDES MINOS* TWO *ARISTOLOCHIA INDICA* FEEDING BUTTERFLIES AND THEIR HOST PLANT FROM THE NUCLEOTIDE SUBSTITUTION RATES OF THEIR CYTOCHROME OXIDASE SUBUNIT I (COI) GENE AND RIBULOSE BISPHOSPHATE CARBOXYLASE (RBCL) GENE	191
09-41	PROBIOTIC CHARACTERIZATION OF LACTIC ACID BACTERIA ISOLATED FROM BREAST MILK AND INFANT FECES	191
09-42	PHARMACOLOGICAL EFFICACY OF LEAVES OF *SYZYGIUM PALGHATENSE* GAMBLE (MYRTACEAE) ENDEMIC TO PALAKKAD DISTRICT, KERALA	192
09-43	INFRAGENERIC RELATIONSHIP AMONG THE INDIAN *ARISAEMA* (ARACEAE) BASED ON ITS SEQUENCES	192
09-44	COMPARATIVE PHENOLOGY OF *TRICHOPUS ZEYLANICUS* GAERTN. SUBSP. *TRAVANCORICUS* (BEDD.) BURKILL EX K. NARAYANAN: AN ETHNOMEDICINAL PLANT	193
09-45	ANTICANCR EFFICACY OF PETROLEUM ETHER FRACTION OF METHANOLIC EXTRACT OF *LEUCAS ASPERA* ON HELA CELLS	193

09-46	INTERACTION STUDIES OF PLANT FLAVANOID ISORHAMNETIN WITH CALF THYMUS DNA: *IN SILCO* AND BIOPHYSICAL EVALUATION	194
09-47	ANATOMICAL STUDIES OF *HILDEGARDIA POPULIFOLIA* (ROXB. & WALL.) SCHOTT & ENDL. [= *STERCULIA POPULIFOLIA* ROXB. & WALL.] AND *THESPESIA POPULNEA* (L.) SOLAND EX CORREA (MALVACEAE) LEAVES	194
09-48	ROLE OF INSULIN PATHWAY IN MEMORY RETENTION OF *CAENORHABDITIS ELEGANS*	195
09-49	ROLE OF SURFACE MICRO FLORA IN ENHANCING THE ANTI CANCEROUS POTENTIAL OF NONI	195
09-50	ANTI - OBESITY EFFECTS OF *GARCINIA GUMMI - GUTTA* (L.) ROBS. SEED OIL IN 3T3 - L1 ADIPOCYTES	196
09-51	ETHNOBIOLOGICAL SURVEY IN THE COASTAL AREAS OF THRISSUR DISTRICT, KERALA	196
09-52	STUDY OF THE EPIPHYTIC ALGAL BIOMASS FROM PNEUMATOPHORES OF *AVICENNIA OFFICINALIS* L.	197
09-53	ASSESSMENT OF ANTI - INSECT PROPERTIES OF *ANAMRITA COCCULUS, STRYCHNOS NUX-VOMICA* AND *CARDIOSPERMUM HALICACABUM* AGAINST *OLEPA RICINI* (LEPIDOPTERA: NOCTUIDAE).	197
09-54	DIVERSITY OF BUTTERFLY WING SCALES AND THEIR ROLE IN COLOUR PATTERN AND OTHER	198
09-55	ON GERMPLASM CONSERVATION OF SOME ENDEMIC WILD ORNAMENTAL PLANTS IN JNTBGRI FIELD GENE BANK	198
09-56	MICROPROPAGATION AND SYNTHETIC SEED PRODUCTION OF *EUPATORIUM TRIPLINERVE* VAHL	199
09-57	A SYSTEMATIC ACCOUNT OF FRESH WATER DIATOMS - POTENTIAL SOURCE AS LIVE FEEDS IN AQUACULTURE AND BIODIESEL PRODUCTION	199
09-58	EFFECT OF DROUGHT STRESS IN GROWTH AND QUALITY OF *CENTELLA ASIATICA* (L.) URB	200
09-59	STUDY ON PESTS AND PREDATORS OF *APIS CERANA INDICA* F.IN SELECTED APIARIES OF THRISSUR DISTRICT	200
09-60	CHEMOPROSPECTING OF *PSILANTHUS TRAVANCORENSIS* (WT. & ARN.) LEROY– A MEDICINAL SPECIES OF RUBIACEAE.	201
09-61	LARVICIDAL EFFICACIES OF TWO PLANT EXTRACTS AGAINST *AEDES ALBOPICTUS*	201
09-62	MICROBIAL DIVERSITY AND RESISTOME STRUCTURE OF POLLUTED AND NON - POLLUTED ENVIRONMENTS IN SOUTH INDIA	202
09-63	EFFECTIVE AND SUSTAINABLE ALTERNATIVE FOR USING CITRUS PEEL WASTE	202
09-64	DIVERSITY OF PLANKTONIC ROTIFERS IN AYIRAMTHENGU MANGROVE KOLLAM	203
09-65	STUDIES ON THE VARIATIONS IN SECONDARY METABOLITES AND ANTIOXIDANT ACTIVITY OF *ZINGIBER ZERUMBET* (L) SM. RHIZOME	203
09-66	NUTRITIONAL AND ANTI NUTRITIONAL ANALYSIS IN *ARTOCARPUS HIRSUTUS* LAM	204
09-67	SCREENING OF BIOACTIVE COMPOUNDS IN *PREMNA WIGHTIANA* SCHAUER (LAMIACEAE)	204
10 - MATHEMATICAL & STATISTICAL SCIENCES		
Best paper		
10-01	CHARACTERIZATION OF DISTANCE HEREDITARY GRAPHS USING DISTANCE SPECTRUM	205
10-02	ANALYSIS OF A QUEUE WITH JOINING STRATEGY AND INTERRUPTION REPEAT OR RESUMPTION OF SERVICE	205
10-03	ESTIMATION OF STRESS-STRENGTH RELIABILITY USING A GENERALIZATION OF POWER TRANSFORMED HALF-LOGISTIC DISTRIBUTION	206
Oral presentation		
10-04	AN APPLICATION OF INTERIOR EXTERIOR AND BOUNDARY OF FUZZY SOFT MULTI TOPOLOGY IN FLOOD	206
10-05	MINIMAL IMMERSIONS OF STATISTICAL MANIFOLDS	207
10-06	SPIKING NEURAL P SYSTEMS WITH STRUCTURAL PLASTICITY AND MEMORY	207
10-07	ON A QUEUEING-INVENTORY SUPPLY CHAIN SYSTEM WITH IMPATIENCE OF CUSTOMERS	207
Poster presentation		
10-08	A NEW FAMILY OF ALPHA POWER TRANSFORMED FRÉCHET DISTRIBUTION AND ITS APPLICATIONS IN RAINFALL DATA ANALYSIS	208

11-PHYSICAL SCIENCES		
Best paper		
11-01	GRAPHENE INCORPORATED TITANIUM DIOXIDE CO-EXPOSED WITH HIGH ENERGY {001} AND {010/100} FACETS FOR SELF - CLEANING NANOCOATINGS	209
11-02	DEVELOPMENT OF AN IONOGEL MEMBRANE FOR CO_2 SENSING APPLICATION	209
11-03	ENHANCEMENT OF MICROWAVE DIELECTRIC PROPERTIES OF $CA_3TE_2ZN_3O_{12}$ GARNET CERAMICS BY COLD SINTERING PROCESS	210
11-04	SPR INDUCED Au@Ag CORE SHELL DOPED SiO_2-TiO_2-ZrO_2 FIBER OPTIC SENSOR FOR VITAMIN A DETECTION	210
Oral Presentation		
11-05	RICE STRAW BASED COPPER OXIDE NANOCOMPOSITE AS ANTIBACTERIAL AGENT	211
11-06	BEAUTY MEASUREMENT: AN ATTEMPT TO DERIVE AN EQUATION OF BEAUTY	211
11-07	ENHANCED ELECTROMAGNETIC ABSORPTION OF CB AND RGO INCORPORATED SILICON RUBBER IN X AND KU BAND	211
11-08	OPTIMIZATION OF ELECTROCHEMICAL PERFORMANCE, AND OPERATION VOLTAGE OF SUPER CAPACITOR	212
11-09	INSIGHT INTO INTERPLAY BETWEEN CRYSTAL STRUCTURE AND LUMINESCENT PROPERTIES OF GARNET PHOSPHORS	213
11-10	ANTIOXIDANT PROPERTIES OF LANTHANUM OXIDE NANOPARTICLES SYNTHESIZED USING ORGANIC AND BIOLOGICAL CAPPING AGENTS	213
11-11	INVESTIGATING THE ELECTROMAGNETIC AND CHEMICAL ENHANCEMENTS IN G - SERS WITH THERMALLY EVAPORATED SILVER.	214
11-12	STRUCTURAL STUDIES OF ZINC OXIDE THIN FILM BY SOL - GEL DIP COATING METHOD	214
11-13	RESPONSE OF BHINDI (*ABELMOSCHUS ESCULENTUS* L.) TO FERTIGATION AND FOLIAR NUTRITION OF MICRONUTRIENTS ON THE GROWTH, YIELD AND QUALITY OF BHINDI	215
11-14	WETTING MECHANISM OF BIMODAL POROUS TIO_2 - ZRO_2 TRANSPARENT COATINGS	215
11-15	A FLEXIBLE, POROUS, ENVIRONMENT FRIENDLY, INTEGRATED SUPER CAPACITOR USING RGO-MODIFIED FILTER PAPER	216
11-16	INFLUENCE OF EU^{3+} SUBSTITUTION ON CRYSTAL STRUCTURE AND OPTICAL PROPERTIES OF $SRBILITEO_6$ DOUBLE PEROVSKITE	216
11-17	ENHANCED LIGHT EXTRACTION FROM ORGANIC LIGHT EMITTING DIODES USING A NANOPARTICLE SCATTERING LAYER	217
11-18	ULTRAVIOLET PHOTO DETECTORS BASED ON ZINC OXIDE: DEPENDENCE ON MORPHOLOGY	217
11-19	INFLUENCE OF GATE DIELECTRIC PROCESSING ON THE PERFORMANCE OF OF ETS: EFFECT OF SOLVENT POLARITY	218
11-20	GREEN FLOURESCENT CARBON NANOPARTICLES FROM THE PITH OF *MANIHOT ESCULENTA* (TAPIOCA) STEM FOR FE (III) DETECTION	219
Poster Presentation		
11-21	THERMODYNAMICS OF QUARK GLUON PLASMA USING CLUSTER EXPANSION	219
11-22	ENHANCEMENT OF PROPERTIES IN $BIFEO_3$ DUE TO PHASE TRANSITION BY EUROPIUM DOPING	220
11-23	SPECTROSCOPIC STUDIES OF CERIUM BASED NANOPHOSPHORS	220
11-24	DIELECTRIC RELAXATION AND THERMAL STUDIES IN SUPER COOLED AND GLASSY STATES OFANTI CANCEROUS ALKALOID BRUCINE	221
11-25	GREEN SYNTHESIS OF SILVER NANOPARTICLES AND THEIR APPLICATION AS SERS SUBSTRATES	221
11-26	UTILIZATION OF PERLITE AND VERMICULITE IN CEMENT COMPOSITES FOR GAMMA RAY SHIELDING APPLICATIONS	222
11-27	THE STRUCTURAL AND MORPHOLOGICAL STUDY OF VERTICALLY ALIGNED ZNO NANORODS PREPARED BY CHEMICAL ROUTE	222
11-28	SPECTROSCOPIC FT - IR, FT - RAMAN, MOLECULAR DOCKING STUDIES, THERMAL STABILITY ANALYSIS, COMPUTATIONAL INVESTIGATION AND CONFORMATIONAL ANALYSIS OF DIURON	223

11-29	EFFECT OF ELECTROLYTE TEMPERATURE ON ALUMINIUM DOPING OF TIO_2 NANOTUBES BY ELECTROCHEMICAL ANODISATION	224
11-30	BIOCOMPATIBLE LUMINESCENT EUROPIUM DOPED FLUORAPATITE FOR IMAGING APPLICATIONS	224
11-31	EFFECT OF NICKEL DOPING ON THE STRUCTURAL, MORPHOLOGICAL AND OPTICAL PROPERTIES OF PULSED LASER ABLATED $BASNO_3$ FILMS	225
11-32	CADMIUM OXIDE AND STRONTIUM OXIDE-NOVEL NANOPARTICLES WITH EFFECTIVE BANDGAPS FOR TECHNOLOGICAL APPLICATIONS	225
11-33	HYDROTHERMAL SYNTHESIS OF MOLYBDENUM DISULPHIDE (MOS_2) NANOPARTICLES FOR ENERGY STORAGE APPLICATIONS	227
11-34	CRYSTAL STRUCTURE, MICROSTRUCTURE AND MICROWAVE DIELECTRIC PROPERTIES OF NOVEL GLASS FREE $NAPB_2B_2V_3O_{12}$ (B=MG, ZN) CERAMICS	228
11-35	BIOSYNTHESIZED, MAGNETICALLY RETAINABLE BINARY TRANSITION METAL OXIDE FEO / MNO NANOCOMPOSITES FOR ENVIRONMENTAL REMEDIATION	228
11-36	STUDY ON YTTRIA / ALUMINA NANOCOMPOSITE SYSTEM FOR THEIR APPLICATIONS AS INFRARED TRANSPARENT CERAMIC WINDOW MATERIAL	229
11-37	INVESTIGATION OF NON-MONOTONIC VARIATION OF SECOND MAGNETIZATION PEAK IN A LOW T_C SUPERCONDUCTOR, $CA_3RH_4SN_{13}$	229
11-38	ANTIOXIDANT ACTIVITY OF BIOSYNTHESISED NANOSTRUCTURED CERIA USING ONION JUICE EXTRACT	230
11-39	DECIPHERING THE CRYSTAL STRUCTURE AND PHOTOLUMINESCENCE PROPERTIES OF B SITE ORDERED DOUBLE PEROVSKITES $BA_2LN_{2/3}TEO_6$ (LN = Y, GD-LU)	230
11-40	*IN VITRO* CYTOTOXICITY ANALYSIS OF CALCIUM SULFIDE NANOPARTICLES	231
11-41	OPTICAL BANDGAP ANALYSIS OF COPPER OXIDE AND MANGANESE OXIDE NANOPARTICLES - A COMPARATIVE STUDY	232
11-42	PHOTOLUMINESCENT PROPERTIES OF TERBIUM DOPED FLUOROBORATE GLASSES FOR GREEN EMISSION APPLICATIONS	232
11-43	VIBRATIONAL SPECTRAL INVESTIGATION OF ORGANIC NLO CRYSTAL MORPHOLINIUM HYDROGEN TARTRATE: A DFT APPROACH	232
11-44	ANALYSIS ON CRYSTALLOGRAPHIC STRUCTURE, SIZE AND BAND GAP VARIATIONS IN ANNEALED CUFE2O4 SPINELS	233
12 - SCIENCE EDUCATION, COMMUNICATION &SOCIETY		
Best Paper		
12-01	NUTRITIONAL PROFILE AND THE EFFECT OF DIETARY INTERVENTIONS IN TYPE II DIABETES PATIENTS	234
12-02	BIBLIOMETRIC ANALYSIS OF CYCLOTIDE RESEARCH	234
12-03	ENHANCING SEED LONGEVITY IN VEGETABLE SEEDS USING FILM COAT TECHNIQUE	235
12-04	E - LESSON TEMPLATE GENERATION IN SCIENCE BASED ON TAXONOMY OF INGENUITY AND CONNECTEDNESS	235
Oral Presentation		
12-05	INFORMATION BEHAVIOUR OF VETERINARIANS IN KERALA	236
12-06	DETERMINANTS OF CONSUMPTION OF LIVESTOCK PRODUCTS AMONG SCHOOL GOING ADOLESCENTS IN KERALA	236
12-07	ROLE OF HAEMOGLOBIN LEVELS IN THE COGNITIVE PERFORMANCES OF PRESCHOOL CHILDREN	236
12-08	INTERNET ADDICTION ON CAMPUS	237
Poster Presentation		
12-09	MARKETING DYNAMICS OF VALUE ADDED COCONUT PRODUCTS IN KERALA - A CASE STUDY ON VIRGIN COCONUT OIL	237
12-10	AN ETHNOBOTANICAL INVESTIGATION ON ZINGIBERALES OF KERALA	238
12-11	COMPARATIVE EVALUATION OF SALAD CUCUMBER CULTIVATION UNDER DIFFERENT DESIGNS OF POLY HOUSE STRUCTURES	239
12-12	SOCIAL INTERVENTIONS ON IMPROVING THE QUALITY OF LIFE OF WOMEN LIVING IN SC SETTLEMENTS IN KAVUMKAL DESOM, KOLLAM	239

characteristics of food products coloured with yam anthocyanin was comparable to the synthetic food colourant.
Conclusions: The present investigation establishedisolation, colour characteristics and applications of an anthocyanin rich food colourant equivalent toFD&C Red No. 3, from purple yam landrace 'Chorakachil'.
Keywords: Purple yam, Anthocyanin, colour quantification, food colorant

01-27

EVALUATION OF RED AMARANTHUS GENOTYPES (*AMARANTHUS TRICOLOR* L.) UNDER WATER STRESS CONDITION

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Background: Drought is one of the major limiting factors in crop production, and will become increasingly important due to the global climate changes.Water greatly influences the yield and quality of vegetables, which are more sensitive to water stress as compared to other crops. Production of water stress tolerant crops becomes more important to sustain the food security in the world. The main objectives of the experiment are to evaluate performance of amaranthus genotypes under waters stress and its adaptation mechanisms.
Method: The ten red amaranthus (*Amaranthus tricolor* L.) genotypes were used for the study. The biometric characters and physiological characters of the genotypes were recorded at the time of harvest. Analysis of Variance (ANOVA) was done for different characters to know the variation between the characters.
Results: The genotype A22 (Madhur local) also recorded the maximum yield, stem girth, number of branches, length of leaf lamina, leaf to stem ratio, membrane integrity, relative water content and proline content of leaves. Presence of proline in the leaves might be considered as an important water stress tolerance mechanism.
Conclusions: high yielding genotype showed maximum membrane integrity, relative water content and proline content of leaves which might be the yield contributing characters under water stressed condition in red amaranthus.
Keywords: Red amaranthus, Water stress, Biometric characters, Physiological characters, Yield

01-28

EVALUATION OF ROS CYCLE AND TOLERANCE MECHANISM IN *SESAMUM ORIENTALE* L. AGAINST *ALTERNARIA SESAMI*

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Background: Plants and pathogens communicate with each other through reactive oxygen species (ROS) signalling network. Induction of ROS is one of the earliest observable manifestations of a plant defence strategy orchestrated by ROS gene network. So the ROS cycle seems to have an increasing importance. The leaf spot disease caused by *Alternariasesami* is one of the major single threat to sesame. In this scenario, the present study aims to unravel the biochemistry of ROS cycle and to formulate an eco- friendly control measure against the disease.
Methods: Leaf tissues of sesame from 1, 3, 5, 7, 9, 11 and 13 days after infection were subjected to biochemical studies and compared with respective controls and also evaluate the tolerance mechanism using plant based fungicide and bio-control agent.
Results: The superoxide anion and hydrogen peroxide (H_2O_2) concentrations remarkably increased in diseased plants compared with the control.H_2O_2 can be detoxified via the ascorbate–glutathione cycle. Ascorbate, glutathione content and the related key enzymes of ascorbate-glutathione cycle showed high activities up to 9th day followed by a decrease. A lower induction of antioxidant defense system in turn leads to oxidative damage in sesame. The application of plant extract or microbial antagonists to sesame initiated a series of biochemical changes in the plants as part of the plant defense response.
Conclusion: The present study outlines defense mechanisms of sesame Thilaraniagainst *A. sesami* by activating antioxidant enzymes to an extent and the disease management strategies are trialed by antagonistic microorganisms and plant extract based control.
Keywords: Sesame, *Alternariasesami,* ROS Cycle, Ascorbate-Glutathione cycle