FACULTY PROFILE

Name of the Faculty:	**Dr. B. Ratna Sunil**	
Designation:	**Associate Professor**	
Department:	**Mechanical Engineering**	
Date of Birth:	**12-04-1981**	
AICTE – ID:	**1-4530969618**	

Education	• **Diploma in Mechanical Engineering** from M.B.T.S. Government Polytechnic, Guntur, India in 1996 • **B.E in Mechanical Engineering** from Andhra University, Visakhapatnam, India in 2004 • **M.E in Production Engineering** Specialization from Osmania University, Hyderabad, India in 2007 • **Ph.D. in Biomaterials** specialization from IIT Madras, Chennai, India in 2014

Experience	Teaching: 11 Years	Industry: 0 Years	**Total: 15.5 Years**
	Research: 4.5 Years	Others: 0 Years	

Research Specialization	Biomaterials, Nanostructured materials, Solid state welding, Severe plastic deformation, Composite materials, Surface engineering, High strength lightweight materials

Courses taught	1. Engineering Graphics	2. Materials Engineering
	3. Welding Technology	4. Basic Manufacturing Processes
	5. Surface Engineering	6. Robotics
	7. Industrial Engineering	8. CAD/CAM
	9. Industrial Management and Entrepreneurship development	

Research contributions

International/national peer reviewed journals

S. No.	Title of paper	Journal	Year	Vol.	pages	Indexing
1	Wear and corrosion behaviour of the cryogenically treated tungsten carbide coatings	Surf. Eng. (Taylor & Francis) **Q1** IF 2.45	2023	In press	--	**SCI**
2	Effect of inert environment on the sliding wear behaviour of the HVOF sprayed WC-12Co coating	Int. J. Ref. Met. Hard Mater., (Elsevier) **Q1** IF 4.8.	2023	In Press	--	**SCI**

3	Tribological characteristics of WC-12Co coatings sliding against SiC and Si_3N_4 counter balls	Silicon, (Springer) **Q2**, IF 2.94	2023	In Press	1-10	**SCI**
4	Reciprocating sliding wear behaviour of the heat-treated WC-12Co coatings,	I. Mech. E. Part J: J. Eng. Tri. (SAGE) **Q2** IF 1.8	2023	237(4)	798-807	**SCI**
5	Magnesium based alloys and composites: Revolutionized biodegradable temporary implants and strategies to enhance their performance	Materialia, (Elsevier) **Q1**	2023	27	101680	**SCOPUS**
6	Microstructure, mechanical properties and corrosion behavior of Rare Earths (RE) containing Mg-Zn alloy for biomedical applications	Mater Today: Proc. (Elsevier) **Q2**	2023	In Press	--	**SCOPUS**
7	A review on developing high-performance ZE41 magnesium alloy by using bulk deformation and surface modification methods	J. Magnes. Alloys, (Elsevier) **Q1** IF 17.5	2023	11(3)	776-800	**SCI**
8	Temperature-dependent wear characteristics of ZE41 magnesium alloy under air and inert environments	Mater. Sci. Eng. Technol., (Wiley) **Q3**) IF 1.03	2023	In Press	--	**SCI**
9	Role of processing temperature on microstructure, mechanical properties and corrosion behavior of fine grained AZ31 magnesium alloy produced by groove pressing	Mater. Sci. Eng. Technol., (Wiley) **Q3**) IF 1.03	2023	In Press	--	**SCI**
10	Investigation on the engine parameters of a DI diesel engine using diesel and canola biodiesel-blended fuel with 1-4 dioxane additive	Journal of Mines, Metals and Fuels, **Q4**	2023	In Press		**SCOPUS**
11	The role of aluminium content on the corrosion initiated mechanical failure of AZ series magnesium alloys	Mater Today: Proc. (Elsevier) **Q2**	2023	In Press	--	**SCOPUS**

12	Effect of argon gas environment on high temperature sliding wear characteristics of NiCrBSi laser clad	Mater Today: Proc. (Elsevier) **Q2**	2023	In Press	--	**SCOPUS**
13	A short review on the development of rare earths containing magnesium alloys for biomedical applications	Lecture Notes in Mechanical Engineering (Springer) **Q4**	2023	In Press	--	**SCOPUS**
14	Temperature dependent sliding wear behaviour of Stellite 6 alloy	Mater Today: Proc. (Elsevier) **Q2**	2023	78,	514-519	**SCOPUS**
15	Comparative investigations on the bioactivity of surface grain refined titanium and surface oxidized titanium for biomedical implant applications,	Biointerface Res. Appl. Chem. **Q4**	2023	13(4)	318	**WoS, SCOPUS**
16	Effect of AC/DC electrical fields on ZnO nanoparticles kinetics	Acta fytotechn zootechn, **Q4**	2022	25	324-332	**SCOPUS**
17	Surface functionalized titanium with enhanced bioactivity and antimicrobial properties through surface engineering strategies for bone implant applications	Current Opinion in Biomedical Engineering, (Elsevier) **Q1,** IF 4.16	2022	23	100398.	**SCI**
18	Machining behaviour of AZ91E hybrid composite reinforced with granite and fly Ash powders	Eng. Res. Express. (IOP) **Q3,** IF 1.2	2022	4	015035	**WOS, SCOPUS**
19	Development Of Rare Earths Containing Magnesium Alloys For Biomedical Applications: A review	Advances in Science and Technology, (Transtech, Switzerland)	2022	120	35-40	**Google Scholar**
20	Developing Mg based composites for degradable orthopedic implant applications: A review	Advances in Science and Technology, (Transtech, Switzerland)	2022	120	35-40	**Google Scholar**

21	Characterization of CP-Ti processed by micro arc oxidation for bone implant applications	Advances in Science and Technology, (Transtech, Switzerland)	2022	120	35-40	**Google Scholar**
22	Dispersion effect of Al2O3 nanoparticles in diesel and hemp biodiesel blend on the engine parameters of a diesel engine	AIP Conference proceedings, (AIP) **Q4**	2022	2648	040007	**SCOPUS**
23	Friction and wear behavior of BN(h) and Ag incorporated nickel phosphorous coatings under dry reciprocating sliding conditions	Tribo. Mater. Surf. Interface, (Taylor & Francis) **Q3**.	2022	16(1)	23-33	**SCOPUS**
24	Carbide-based thermal spray coatings: A review on performance characteristics and post-treatment	Int. J. Ref. Met. Hard Mater. (**Elsevier)** **Q1,** IF 4.8	2022	103	105772	**SCI**
25	Machining characteristics of Al6063 composites reinforced with SiC particles	Mater Today: proc, (Elsevier) **Q2**	2022	50(5)	2351-2354	**SCOPUS**
26	Role of heat treatment on machining characteristics and surface roughness of AZ91 Mg alloy,	Mater Today: proc, (Elsevier) **Q2**	2022	50(5)	2488-2492	**SCOPUS**
27	Optimization of single roller burnishing process parameters by design of experiments	Mater Today: proc, (Elsevier) **Q2**	2022	50(5)	1967-1970	**SCOPUS**
28	Investigation on the role of microstructure and temperature on tribological characteristics of fine grained ZE41 Mg alloy	Tribo. Mater. Surf. Interface, (Taylor & Francis) **Q3**.	2022	16(1)	68-75	**SCOPUS**
29	Effect of inert gas environment on the sliding wear behavior of AZ91/B_4C surface composite	I Mech E Proc. Part J: J. Eng. Tribology, (SAGE) **Q2**, IF 1.81	2022	236(9)	1880-1888	**SCI**

30	Developing Mg-Zn-fish bone derived hydroxyapatite composites for biomedical applications: in vitro degradation studies	Biointerface Res. Appl. Chem. **Q3**	2022	12(5)	712-722	**WoS, SCOPUS**
31	Producing high wettable surface for pure titanium sheets by shot peening for bone implant applications	Biointerface Res. Appl. Chem. **Q3**	2022	12(5)	5745-5752	**WoS, SCOPUS**
32	Optimization of single roller burnishing process parameters by design of experiments	Mater Today: proc, (Elsevier) **Q2**	2021	50(5)	1967-1970	**SCOPUS**
33	Numerical evaluation of the residual stresses in shot peening of alloy steels	Eng. Res. Express (IOP) **Q3,** IF 1.2	2021	3	045059	**SCI**
34	Field Application of ZnO and TiO2 Nanoparticles on Agricultural Plants	*Agronomy* (MDPI) **Q1,** IF 3.9	2021	11	2281	**SCI**
35	Effect of heat treatment environment on the structural characteristics and microhardness of high velocity oxy-fuel sprayed tungsten carbide-cobalt coating,	Material Science and Engineering Technology, (Wiley) **Q3,** IF 1.02	2021	52(12)	1346-1354	**SCI**
36	Tuning the Morphology and State of Aggregation of Fullerene C60 Using Non-ionic Surfactants	*Colloid Journal*, (Springer) **Q4,** IF 1.01	2021	83(4)	474-482	**SCI**
37	Zinc substituted hydroxyapatite: Synthesis, structural analysis and antimicrobial behaviour	*Trans. Ind. Inst. Met.* (Springer) **Q2**. IF 1.39	2021	74	2335–2344	**SCI**
38	Developing Zn-MgO composites for degradable implant applications	*Mater. Let.* (Elsevier) **Q2** IF 3.57	2021	302	130433	**SCI**
39	Developing composites of zinc and hydroxyapatite for degradable orthopedic implant applications	*IOP Conf. Series: Mater. Sci. Eng.* (**IOP)**	2021	1116	012002	**WoS**

40	Zinc-calcium silicate composites produced by ball milling and sintering for degradable implant applications	*Mater. Today: Proc.* (Elsevier) **Q2**	2021	44(1)	1584-1588.	**SCOPUS**
41	Microhardness and frictional characteristics of cryogenically treated carbide coatings	*Mater. Today: Proc.* (Elsevier) **Q2**	2021	44(1)	3112-3116	**SCOPUS**
42	Effect of cryogenic treatment duration on the microhardness and tribological behavior of 40CrMoV5 tool steel	*Mater. Today: Proc.* (Elsevier) **Q2**	2021	38	2140-2144	**SCOPUS**
43	Sliding Wear Characteristics of Silver Particles Incorporated Electroless Nickel Phosphorus Composite Coatings	*Lecture notes in Mechanical Engineering,* (Springer) **Q4**.	2021	--	823-829	**SCOPUS**
44	Effect of Crack Angle on Stress Shielding in Bone and Orthopedic Fixing Plate Implant: Design and Simulation	*Lecture notes in Mechanical Engineering,* (Springer) **Q4**.	2021	--	785-792	**SCOPUS**
45	Effect of Friction Stir Processing on the Sliding Wear Characteristics of AZ91 Mg Alloy	*Lecture notes in Mechanical Engineering,* (Springer) **Q4**.	2021	--	663-669	**SCOPUS**
46	Enhancing the wettability of pure titanium by shot peening for implant applications	*IOP Conf. Series: Mater. Sci. Eng.* (**IOP)**	2021	1185,	012012	**WoS**
47	Solid state surface deposition by friction surfacing: A review	*IOP Conf. Series: Mater. Sci. Eng.* (**IOP)**	2021	1185,	012013	**WoS**
48	Bioactive titanium composites for bone implant applications	*IOP Conf. Series: Mater. Sci. Eng.* (**IOP)**	2021	1185,	012032	**WoS**

49	Enhancing diesel engine performance by using nano-dispersing agents in fuel: A review	*IOP Conf. Series: Mater. Sci. Eng.* (**IOP)**	2021	1185,	012039	**WoS**
50	Role of plunge depth on the joint formation and mechanical behavior of Al6063 AZ91 dissimilar lap joint produced by friction stir welding	Material Science and Engineering Technology, (Wiley) **Q3,** IF 1.02	2021	52(1)	111-121	**SCI**
51	Synthesis, characterization and antimicrobial properties of strontium substituted hydroxyapatite	*Journal of the Australian Ceramic Society*, (Springer) **Q3,** IF 1.74	2021	57	195-204	**SCI**
52	Machining characteristics, wear and corrosion behavior of AZ91 magnesium alloy - fly ash composites produced by friction stir processing	Material Science and Engineering Technology, (Wiley) **Q3,** IF 1.02	2021	52(1)	88-99	**SCI**
53	Decreases Bioavailability of Arsenic(V) via Biotransformation of Manganese Oxide into Biogenic Oxalate Minerals	*Journal of Fungi* (MDPI) **Q1,** IF 5.72	2020	270	1-12	**SCI**
54	Effect of heat treatment on the temperature dependent wear characteristics of electroless Ni–P–BN(h) composite coatings	SN Applied Science (Springer) **Q2**	2020	2	1101	**WoS SCOPUS**
55	Developing Mg-Zn surface alloy by friction surface alloying (FSA): in vitro degradation studies in simulated body fluids	International Journal of Minerals, Metallurgy and Materials, (Springer) **Q1,** IF 3.85	2020	27	962-969	**SCI**
56	Sliding wear behavior of AZ91/B4C surface composites produced by friction stir processing	Mater. Res. Express (IOP) **Q2**, IF 2.02	2020	7	016586	**SCI**
57	Assessing the material dependent stress distribution	Lecture Notes in Mechanical	2020	--	337-342	**SCOPUS**

	in fractured bone and fixing plate by finite element analysis	Engineering, (Springer) **Q3**				
58	Role of Friction Stir Processing Parameters on the Microstructure and Hardness of ZE41 Mg Alloy: A Taguchi Approach,	ASTM Mater. Perform. Character. (ASTM) **Q3**	2019	8(1)	20180145	**WoS SCOPUS**
59	Effect of heat treatment on mechanical and tribological characteristics of Electroless Ni-P deposits	Journal of Physics: Conference Series	2019	1355	012032	**SCOPUS**
60	Tribological and Morphological Evaluation of Ni-P and Ni-P/D Coatings	Materials Science Forum, (Tran Tech, Switzerland) **Q4**	2019	969	73-79	**SCOPUS**
61	Effect of heat treatment on microstructure, microhardness and corrosion resistance of ZE41 Mg alloy	*Koroze A Ochrana Materiálu* (De-Gruyter) **Q3**	2019	63(2)	79-85	**SCOPUS**
62	Role of microstructure on the degradation behaviour of friction stir processed AZ series Mg alloys assessed in simulated physiological solutions	Journal of Physics: Conference Series**,** (IOP)	2019	653	*012025*	**SCOPUS**
63	Hardness and sliding wear characteristics of AA7075-T6 surface composites reinforced with B_4C and MoS_2 particles	*Materials Research Express*, (IOP) **Q2,** IF 2.02.	2019	6	086589	**SCI**
64	Effect of heat treatment on the hardness and wear characteristics of NiCrBSi laser clad deposited on AISI410 stainless steel,	*Materials Research Express*, (IOP) **Q2,** IF 2.02.	2019	6	086524	**SCI**
65	Sliding wear characteristics of as-deposited and heat-treated Electroless Ni-P coatings against AISI E52100 steel ball,	*Materials Research Express*, (IOP) **Q2,** IF 2.02.	2019	6	036401	**SCI**
66	Effect of grain refinement on corrosion rate, mechanical	*Trans. Ind. Inst. Met*, (Springer)	2019	721	23-132	**SCI**

	and machining behaviour of friction stir processed ZE41 Mg alloy	**Q2**, IF 1.3				
67	Magnesium/fish bone derived hydroxyapatite composites by friction stir processing: studies on mechanical behaviour and corrosion resistance	Bulletin of Materials Science, (Springer) **Q3**, IF 1.9	2019	42	122	**SCI**
68	Surface engineering of ZE 41 Mg alloy by friction stir processing: effect of process parameters on microstructure and hardness evolution	*Materials Today: proceedings* , (Elsevier) **Q2**	2019	15(1)	125-131	**SCOPUS**
69	Role of microstructure and secondary phase on corrosion 9ehaviour of heat treated AZ series magnesium alloys	*Materials Today: proceedings* , (Elsevier) **Q2**	2019	15(1)	175-181	**SCOPUS**
70	Developing composite of ZE41 magnesium alloy-calcium by friction stir process for biodegradable implant applications	*Materials Today: proceedings* , (Elsevier) **Q2**	2019	15(1)	270-277	**SCOPUS**
71	Microstructure, mechanical and corrosion properties of friction stir processed ZE41 Mg alloy	*Materials Today: proceedings* , (Elsevier) **Q2**	2019	15(1)	50-56	**SCOPUS**
72	Producing Al5083-CNT composites by friction stir processing: influence of grain refinement and CNT on mechanical and corrosion properties,	*Materials Today: proceedings* , (Elsevier) **Q2**	2019	15(1)	44-49	**SCOPUS**
73	Developing composites of ZE41 Mg Alloy – Naturally Derived Hydroxyapatite by Friction Stir Processing: Investigating in vitro Degradation Behavior	*Mater Technol: Adv Perform Mater* (Taylor and Francis) IF 3.297	2018	33(9)	603-611	**SCI**

74	An investigation on the hardness and corrosion behaviour of MWCNT/Mg composites and grain refined Mg	*Journal of magnesium and alloys,* (Elsevier) **Q1**, IF 17.6	2018	6	83-89	**SCI**
75	Joining of AZ91 Mg alloy and Al6063 alloy sheets by friction stir welding	*Journal of magnesium and alloys,* (Elsevier) **Q1**, IF 17.6	2018	6	71-76	**SCI**
76	Surface metal matrix composites of Al5083-fly ash produced by friction stir processing	*Materials Today: proceedings* , (Elsevier) **Q2**	2018	5	8391–8397	**SCOPUS**
77	Machining characteristics and corrosion behaviour of grain refined AZ91 Mg alloy produced by friction stir processing: Role of tool pin profile	Trans Ind Inst Metals, (Springer) **Q2,** IF 1.39	2018	71 (4)	951-959	**SCI**
78	Influence of heat treatment on the machinability and corrosion behaviour of AZ91 Mg alloy	*Journal of magnesium and alloys,* (Elsevier) **Q1**, IF 17.6	2018	6	52–58	**SCI**
79	Fracture toughness and fatigue 10ehaviour of spider silk and S-glass epoxy composites: An FEM approach	*Materials Today: proceedings* , (Elsevier) **Q2**	2018	5	2627–2634	**SCOPUS**
80	Design and simulation of PMMA-titanium composite bone fixing plates using finite element analysis: optimizing the composition to minimize the stress shielding effect	*I Mech E Part C: J Mechl Eng Sci,* (SAGE) Q2 IF 1.75.	2017	231(23)	4402-4412	**SCI**
81	Machining characteristics of fine grained AZ91 Mg alloy produced by friction stir processing	*Trans Nonfer Met soc China* (Elsevier) **Q1,** IF 3.75.	2017	27(4)	804-811	**SCI**

82	Joining of AZ31 Mg alloy sheets by friction stir welding and investigating corrosion initiated failure	*Materials Today: proceedings* , (Elsevier) **Q2**	2018	4	6712-6717	**SCOPUS**
83	Microstructure, microhardness and wear 11ehaviour of AZ31 Mg alloy – fly ash composites produced by friction stir processing	*Materials Today: proceedings* , (Elsevier) **Q2**	2018	4	6671-6677	**SCOPUS**
84	Electrochemical Corrosion Behaviour of Binary Magnesium Alloys	J Mater Sci Surf Eng	2017	5(3)	561-564.	**WOS**
85	Different strategies of secondary phase incorporation into metallic sheets by friction stir processing in developing surface composites	*International Journal of Mechanical and Materials Engineering*, (Springer) **Q2**.	2016	11	12	**SCOPUS**
86	Nano and ultra fine grained metallic biomaterials by severe plastic deformation techniques	*Mater Technol: Adv Perform Mater* (Taylor & Francis) IF 3.29.	2016	31(13)	743-755	**SCI**
87	Producing hydroxyapatite from fish bones by heat treatment	Materials Letters (Elsevier) **Q1,** 3.57	2016	185	411-414	**SCI**
88	Influence of bimodal grain size distribution on the corrosion behaviour of friction stir processed biodegradable AZ31 magnesium alloy,	*Journal of Magnesium and Alloys* (Elsevier) ***Q1,*** IF 17.6.	2016	4	68-76	**SCI**
89	In vitro and in vivo studies of biodegradable fine grained AZ31 magnesium alloy produced by equal channel angular pressing	*Mater Sci Eng: C* (Elsevier) **Q1,** IF 8.45	2016	59	356-367	**SCI**
90	Magnesium based surface metal matrix composites by friction stir processing	*Journal of Magnesium and*	2016	4	52-61	**SCI**

		Alloys (Elsevier) **Q1,** IF 17.6.				
91	Effect of aluminium content on machining characteristics of AZ31 and AZ91 magnesium alloys during drilling	*Journal of Magnesium and Alloys* (Elsevier) **Q1,** IF 17.6.	2016	4	15-21	**SCI**
92	Corrosion behaviour of friction stir welded AZ31B Mg alloy-Al6063 alloy joint	*Cogent Engineering* (Taylor & Francis) **Q2**	2016	3(1)	1145565	**SCOPUS**
93	Repetitive corrugation and straightening of sheet metals	*Materials and Manufacturing Processes*, (Taylor & Francis) ***Q1,*** IF 4.78	2015	30(10)	1261-1271	**SCI**
94	Joining of AZ31 and AZ91 Mg alloys by friction stir welding	*Journal of Magnesium and Alloys* (Elsevier) **Q1,** IF 17.6.	2015	4(3)	330-334	**SCI**
95	Nano-hydroxyapatite reinforced AZ31 magnesium alloy by friction stir processing: A solid state processing for biodegradable metal matrix composites	*Journal of Materials Science: Materials in Medicine,* (Springer) **Q2,** IF 4.72	2014	25	075-988	**SCI**
96	Friction stir processing of magnesium – nanohydroxyapatite composites with controlled in vitro degradation behaviour	*Materials Science and Engineering C,* (Elsevier)**, Q1,** IF 8.45	2014	39	315-324	**SCI**
97	Effect of processing route and working temperature on microstructure evolution of AZ31 magnesium alloy during equal channel angular pressing	*Procedia Materials Science*, (2014) 5, 841 – 846. (**Elsevier**).	2014	5	841-846	**Google Scholar**

98	Electrospun nanofibrous polymer coated magnesium alloy for biodegradable implant applications	*Procedia Materials Science*, (2014) 5, 841 – 846. (**Elsevier**).	2014	5	841-846	**Google Scholar**
99	Processing and evaluating mechanical behaviour of lamellar structured degradable magnesium-hydroxyapatite implants,	J Mech Behav Biomed Mater, (Elsevier) **Q2**). IF 4.02	2014	40	178-189	**SCI**
100	Role of biomineralization on the degradation of fine grained AZ31 magnesium alloy processed by groove pressing	Mater Sci Eng C, (Elsevier) **Q1,** IF 8.45	2013	33	1607-1615	**SCI**
101	Wettability and *in vitro* bioactivity studies on titanium rods processed by equal channel angular pressing	*Trans Ind Inst Metals,* (Springer) **Q2**). IF 1.3	2013	66(4)	299-304	**SCI**
102	Bioactive grain refined magnesium by friction stir processing	Materials Science Forum,. (TranTech) **Q2**	2012	710	264-269	**SCOPUS**
103	Microwave sintering of nanocrystalline WC-12Co: Challenges and perspectives,	Int. J. Refract. Met Hard Mater,(Elsevier) **Q1,** IF 4.8.	2010	28	180-186	**SCI**

Books published

S. No.	Title of the book	Publisher	year
1	Surface Engineering by Friction Assisted Processes	CRC Press, Taylor & Francis, New York, USA	2019

Book chapters Published

S.No.	Title of the Chapter	Book title	Publisher	year
1	Foliar Application of Metallic Nanoparticles on Crops Under Field Conditions.	Plant and Nanoparticles.	Springer	2022
2	Surface composites by	Encyclopedia	Elsevier	2022

	friction stir processing	Materials: Composites		
3	Magnesium based composites for degradable implant applications	Encyclopedia Materials: Composites	Elsevier	2022
4	Investigation on Structural and Wear Characteristics of Mg AZ91/Fly Ash Surface Composite Fabricated by Friction Stir Processing	Advances in Micro and Nano Manufacturing and Surface Engineering	Springer	2019
5	Glass Fiber Hybrid Effects in Assessing the Abrasive Wear Mechanisms of Naturally Woven Fabric/Polymer Composites Under Dry Conditions	Synthesis and Tribological Applications of Hybrid Materials	Wiley	2018

Details of Patents (Filed & Granted)

S. No.	Applications number	Title of the patent	Date of filing/publishing	Published /granted
1	2551-CHE-2014	An improved process for controlled degradation of grain refined magnesium alloy in temporary orthopedic implants	23-05-2014	Granted
2	202041034166	Producing micro-lamellar zinc orthopedic implants	10-08-2020	Granted
3	201941005168	Friction assisted solid state surface alloying	09-02-2019	Published
4	201941012479	A novel zinc based multiphase material for degradable biomedical applications	29-03-2019	Published
5	201941027104	A novel cooling system to decrease the temperature of air or gas	10-03-2020	Published
6	202041011839	Rotary fabric hanging drier	19-03-2020	Published
7	202041015774	Solid state deposition process of surface alloy coating	11-04-2020	Published
8	202041010203	Multi axis rotary stir casting furnace	10-03-2020	Published
9	202041035260	Developing zinc calcium silicate composites for degradable load bearing implants applications	16-08-2020	Published
10	202041035262	Developing high wettable pure	16-08-2020	Published

		titanium bone fixing plate by repetitive ball impacting		
11	202141031030	Teachable Oxygen Flow Control and Monitoring System	10-07-2021	Published
12	202141039033	Gas-Watch: Intelligent Gas Pipeline Leakage and Supply Demand Estimator	28-08-2021	Published
13	202141040136	Safety Petri Nets based Railroad Crossing Safety Critical Control System	04-09-2021	Published
14	202141043317	Design of battery powered eco-friendly two wheeler	24-09-2021	Published
15	202241004928	Cloud based train accident prevention safety system	29-01-2022	Published
16	202241037005	Pile supported Multi-layered Porous Media	28-06-2022	Published
17	202341026276	A Novel Dual-band Four-Element MIMO Antenna for 5G mmWave N257/N258 and N262 band Applications	07-04-2023.	Published
18	202341026280	A compact 4-Element U-shaped MIMO Antenna with Slotted Ground for 5G mmWave Wireless Communications	07-04-2023	Published
19	20234103308	Indoor weather recommendation system using integrated artificial internet of things,	15-05-2023	Published

Details of Conferences/FDPs/STTPs/webinars/Workshops Organized

1) **Coordinator,** A Two day workshop on Research methodologies and scientific publishing, 28th-29th October 2022, Bapatla Engineering College, Bapatla, India.
2) **Coordinator,** A webinar on Intellectual Property Rights: Strategic Role of Academic Institutions 02-09-2022, Bapatla Engineering College, Bapatla, India.
3) **Convener and Editor**, International Conference on Mechanical, Materials and Energy Engineering (ICMMEE 2021), 07th -08th May 2021, Bapatla Engineering College, Bapatla, India. (Proceedings were published in IOP: Mater Sci Eng, Volume: 1185)
4) **Coordinator,** One Day Seminar on Carbon Based Nanomatreials and Their Revolutionized Applications, 15-03-2019, Bapatla Engineering College, Bapatla, India.
5) **Coordinator,** A Two Day Workshop on computational Tools for Research in Engineering and Sciences, 30th Nov – 1st Dec 2018, Bapatla Engineering College, Bapatla, India.
6) **Organizer,** A two days training on Dspace management, 7th to 8th June, 2018, RGUKT Nuzvid, India

7) **Organizer,** Five day Workshop on Developing blended Learning Courses using MOODLE, 14th to 18th November 2017, RGUKT Nuzvid, India
8) **Coordinator,** Five day faculty training program on ANSYS, 24th to 28th July 2017, RGUKT Nuzvid, India.
9) **Organizer,** Three day workshop on Technology Enabled Learning Capacity Building, 5th-7th June 2017, RGUKT Nuzivid, India
10) **Organizer,** a two day workshop on Technology Enabled Learning Implementation Policy Making for RGUKT, 15th-16th March 2017, RGUKT Nuzivid, India
11) **Convener,** one day workshop on Advances in Materials Research and Processing Technologies (AMRPT-2016), 02nd April 2016, Department of Metallurgical and Materials Engineering in association with Department of Mechanical Engineering, Rajiv Gandhi University of Knowledge Technologies (AP-IIIT), Nuzvid, India.
12) **Co-Convener,** one day workshop on Research Trends in Mechanical Engineering (**ResTrenME-2015**), 07th April 2015, Department of Mechanical Engineering, Rajiv Gandhi University of Knowledge Technologies (AP-IIIT), Nuzvid, India.
13) Student coordinator for Accommodation, International Symposium for Research Scholars (ISRS-2012), Department of Metallurgical and Materials Engineering, IIT Madras, Chennai 600030, India

Awards/recognitions/achievements

1) Listed in **world top 2% scientists list 2022,** announced by Stanford University, USA
2) Listed in **world top 2% scientists list 2021,** announced by Stanford University, USA
3) Listed in **world top 2% scientists list 2020,** announced by Stanford University, USA
4) **Erasmus plus staff mobility program 2017-18 (European commission)**. Visited Slovak University of Agriculture at Nitra, Slovak Republic (5th -12th Nov 2017).
5) **Associate fellow (elected), Andhra Pradesh Akademi of Sciences (**2017), India http://apas.org.in/associate-fellows-2017.html
6) **Sudharshan Bhat memorial award** for the **best PhD thesis**, Indian Institute of Technology Madras, Chennai **(2015),** India.
7) **First runner up prize** for the best poster presentation in PANIIT-Research Expo, 4-7th Jan, Shaastra 2014, Indian Institute of Technology Madras, Chennai, India
8) **BAJPAI – SAHA award** for the best student paper presentation, *Society for Biomaterials and Artificial Organs – India (SBAOI),* 2012.
9) **Student travel award**, *New Visions for Biomaterials and Regenerative Medicine* Workshop organized by Prof. DF Williams March 16-17, 2011 SCTIMST, Thiruvananthapuram, Kerala, India

Details of project proposals submitted/sanctioned/completed

S.No.	Title of the Project	Funding body	Submitted/ Sanctioned/ Completed	Amount (Rs/-)	Year/ duration
1	Developing low cost naturally derived	RGUKT, Nuzvid	Completed	5,10,000	2017-2020

	bioceramic material for bone implants applications.				

Consultancy contribution

S.No.	Year	Amount (Rs/-)	Details
1	2018-19	3,00,000	Sahajanand Medical Technologies Pvt. Ltd., Surat, Gujarat, India

Student Project/research guidance

S.No	Level	Total number
1	UG	Completed: 36 Ongoing: 03
2	PG	Completed: 04 Ongoing: 0
3	PhD	Completed: 01 Ongoing: 3

Administrative experience

1. **Associate Dean, R & D,** Bapatla Engineering College, Bapatla, A.P. India from 06-07-2022 to till date.
2. **NAAC & NBA** department coordinator, Bapatla Engineering College, Bapatla, A.P. India (2018-2019)
3. **Associate Dean, Academics**, Rajiv Gandhi University of Knowledge Technologies (AP-IIIT), Nuzvid, A.P, India, from 31-12-2015 to 23-08-2018.
    a. **Chairman** for department level Board of Studies, IIIT Nuzvid
    b. **Member** for Institute level B.O.S., IIIT Nuzvid (2016 and 2017)
    c. Curriculum planned and implemented for 6000 students including PUC, B. Tech (6 Engineering Departments) and M. Tech (3 Engineering Departments)
4. **Coordinator**, Andhra Pradesh State Skill development Corporation (APSSDC) at Rajiv Gandhi University of Knowledge Technologies (AP-IIIT), Nuzvid, A.P, India, from 10-09-2016 to 23-08-2018. **Established 6 APSSDC-SIEMENS Laboratories** (Computer based training, R & AC, AGRO, Electronics -Home, Electronics-office, and Electrical laboratories).
5. **Convener**, Committee for waste disposal at Rajiv Gandhi University of Knowledge Technologies (AP-IIIT), Nuzvid, A.P, India.
6. **Member** of anti ragging committee, disciplinary committee, and several academic committees, Rajiv Gandhi University of Knowledge Technologies (AP-IIIT), Nuzvid, A.P, India.

Research credentials

Index/database	ID/Link
Google Scholar	**https://bit.ly/2Qc5G9w**

SCOPUS	**35410353400**
Web of Science	C-8732-2017
Vidwan ID	175188
ORCID	0000-0001-9855-7808

Invited talks/Keynote lectures/guest lectures:

1) **B. Ratna Sunil**, "The art of Scientific research and publishing", 12-08-2023, Universal College of Engineering and Technology, Guntur, India
2) **B. Ratna Sunil**, a workshop on "Emerging trends in manufacturing of medical implants and particulate technologies", **Teckzite'23**, 04-04-2023, IIIT Nuzvid, A.P., India
3) **B. Ratna Sunil,** Processing of novel light weight magnesium based materials**,** one week **"**Novel Materials" sponsored by AICTE Teaching & Learning (ATAL) Scheme, 23 to 27 Nov 2021, Christian College of Engineering and Technology, Bhilai, Chhattisgarh, India.
4) **B. Ratna Sunil,** Advanced Research Traits in Materials and Designing Mechanical Systems, Vignan University, 22-27 July 2020, Vadlamudi, Guntur, A.P., India
5) **B. Ratna Sunil,** Processing of Mg alloys for industrial applications: perspectives and challenges, Recent Advancements in Aluminium and Magnesium Technologies, Bapatla Engineering College, 04 July 2020, Bapatla, A.P., India
6) **B. Ratna Sunil**, Developing functional biomedical materials by mechanical processing, International Conference on Future Generation Functional Materials & Research (ICFMR-2020) PACE Engineering College, 12th to 14th March 2020, Ongole, A.P. India., India
7) **B. Ratna Sunil,** Developing novel composites for Biomedical applications, Recent Advances in Composite Materials and Analysis of Composite Structures, 29th July – 03rd Aug 2019, JNTU Kakinada, India
8) **B. Ratna Sunil,** Surface Composites by Friction Stir Processing, Recent Advances in Composite Materials and Analysis of Composite Structures, 29th July – 03rd Aug 2019, JNTU Kakinada, India
9) **B. Ratna Sunil,** Surface engineering by friction assisted processes, "International Conference on Advances in Mechanical Engineering (ICAME 2018), 21st -22nd Dec 2018, CMR College of Engineering Technoogy, Hyderabad, India
10) **B. Ratna Sunil,** Recent Trends and Challenges in Biomaterials, "National Metallurgists Day (NMD 2018)", 14th Nov 2018, Rajiv Gandhi University of Knowledge Technologies (AP-IIIT) Nuzvid, India
11) **B. Ratna Sunil,** Novel manufacturing methods for medical implants, A Two Week Faculty Development Programme sponsored by AICTE on "Contemporary Advances in Materials & Manufacturing Engineering (CAMME-2017)", 30th October to 10th November, 2017**,** JNTU Kakinada, India
12) **B. Ratna Sunil,** Collaborative – team work for the technology development**,** *Three Day Residential Training Programme On 'Building Organizational Excellence'* in association with DoPT, Govt. Of India, 1 – 3 November, 2017, A.P. HRDI, Bapatla, India
13) **B. Ratna Sunil,** Research Trends in Advanced Materials and Manufacturing Processes, *Workshop on Research Trends in Mechanical Engineering 2015 (ResTren-ME2015)*04-04-2015, Department of Mechanical Engineering, RGUKT Nuzvid, India
14) **B. Ratna Sunil**, Mechanical processing of magnesium for degradable implant applications, *National seminar on Development of Tools using Biomaterials for Medical Applications (DTBMA-2015)*18th & 19th Sep 2015, RVR and JC Engineering College, Guntur**,** India

15) **B. Ratna Sunil,** Surface Engineering by Friction Stir Processing, *Manufacturing of Advanced Materials (MAM 2016)*, 27th June – 1st July 2016, VNIT Nagpur, Maharastra, India

16) **B. Ratna Sunil,** Surface Engineering by Friction Stir Processing: a new tool in manufacturing engineering, Manufacturing of Advanced Materials (MAM), 29th -30th Sept. 2016, JNTU Kakinada, Andhra Pradesh, India

17) **B. Ratna Sunil,** Introduction to Friction assisted manufacturing Processes, *Faculty Development program on Advanced Manufacturing on Materials (AMM2017),* Newtons Institute of Science and Technology, 28th and 29th July 2017, Macheral, Andhra Pradesh, India

18) **B. Ratna Sunil**, Recent trends in metallic implants, In-house Symposium on *Ancient Technology and Recent Trends in Materials Science*, 01 December 2014, Rajiv Gandhi University of Knowledge technologies (AP-IIIT), Nuzvid, India

19) **B. Ratna Sunil,** Bioactivity enhancement of metallic implants by mechanical processing, *AICTE sponsored national seminar on Advances in Biomaterials for Medical Applications (ABMA-2014)* 14 -15th, March 2014, R.V.R. & J.C. College of Engineering, Guntur, India.

h-index: **23**, Total citations: **1930**
Publications **120** (SCI: **50**, SCOPUS: **46**)
Cumulative impact factor: **265.96**
Average impact factor: **5.54**

(Dr. B. Ratna Sunil)
11-09-2023