Brief Biosketch of Dr R. Subasri, Scientist-G and Head, Centre for Sol-Gel Coatings, ARCI, Hyderabad- 500 005

Dr Subasri is a chemist by training. She obtained her Masters degree in Chemistry from IIT, Madras, India in 1993 and PhD in Chemistry during 1999 from the University of Madras, Tamil Nadu with the research work carried out at Indira Gandhi Centre for Atomic Research, Kalpakkam. After brief stints as a post-doctoral fellow at the Max Planck Institut für Metallforschung, Stuttgart, Germany and at National Institute for Materials Science, Tsukuba, Japan, she joined International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Hyderabad in 2005 and has been leading the Centre for Sol-Gel Coatings at ARCI, since then. Her team has set up a unique and state-of-the-art comprehensive facility for demonstration of sol-gel nanocomposite coating technology for commercialization in the Indian/global market. She has 103 publications in peer reviewed international journals, 13 book chapter contributions, 15 Indian patents (granted); 1 Indian patent applications (pending); 4 US patents and 4 European patents (granted) to her credit and has delivered more than 50 invited talks at various international/national conferences. She is a Max-Planck-India Fellow. She is a life member of Materials Research Society of India (MRSI), Electrochemical Society of India (ECSI), Indian Institute of Metals (IIM) and Indian Women Scientists' Association. She received the Materials Research Society of India (MRSI) medal in 2015 in recognition of her significant contributions to the field of Materials Research and Engineering. Her name featured among the top two percent of scientists in the field of Materials Science in a global list compiled by the researchers from the prestigious Stanford University for the year 2020. She is a regular reviewer for several SCI Journals. Her research interests include development of sol-gel nanocomposite coating formulations for different applications like self-healing corrosion protection, anti-bacterial, biofilm inhibition, anti-reflection, self-cleaning etc.

List of Publications: Total - 103

2023 (Total -5)

1. Photoactive properties of transport sol-gel layers based on strontium titanate for perovskite solar cells, Alina V. Semchenko, Gagik Y. Ayvazyan, Viktoriya V. Malyutina-Bronskaya, Sergei A. Khakhomov, Dmitry L. Kovalenko, Andrei A. Boiko, Vitali V. Sidski, Anton V. Nestsiaronak, Alexander A. Mayevsky, Konstantin D. Danilchenko, Dmitry V. Zhigulin, Vladimir A. Pilipenko, Raghavan Subasri, Nikolai V. Gaponenko, Photonics 10 (2023) 845

2. Hybrid Silane Coatings based on Benzotriazole loaded Aluminosilicate nanotubes for Corrosion Protection of Mild Steel, Ramay Patra*, Aarti Gautam*, K. V. Gobi, **R. Subasri**, Silicon (in press) https://doi.org/10.1007/s12633-023-02556-7

3. Effect of Transition metal and Different Rare-Earth Inhibitors-based Sol-gel Coatings on Corrosion Protection of Mild Steel, Aarti Gautam, K. R. C. Soma Raju, K. V. Gobi, **R. Subasri**, Metals and Materials International 29 (2023) 2909-2925

4. Birru Bhaskar, Ramay Patra, K R C Soma Raju, V. Nagarjuna, Susmita Chaudhuri, **R Subasri**, Prashant Garg, Biofilm Inhibiting Nanocomposite Coatings on Stainless Steel Surgical Instruments: A Possible Strategy to Prevent TASS, J. Coatings Technology and Research 20 (2023) 559-572

5. **R Subasri**, Ramay Patra, Manisha Yadav, Deepak Kumar, Birru Bhaskar, K R C Soma Raju, Subhash Tanwar, Susmita Chaudhuri, Prashant Garg, Biofilm Inhibiting Nanocomposite Coatings on Surgical Sutures: Durability and Mechanistic Insights, J. Coatings Technology and Research 20 (2023) 377-392

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1) K. Pradeep Prem Kumar, K.R.C. Soma Raju and **R. Subasri**, Self-healing corrosion protection coatings obtained by anodization and sol-gel process on Mg AZ31 alloy, Protection of Metals and Physical Chemistry of Surfaces, 58 (2022) 856-871.

2) Aarti Gautam, T. Siva, S. Sathiyanarayanan, K.V. Gobi, **R. Subasri**, Capped inhibitor-loaded halloysite nanoclay-based self-healing silica coatings for corrosion protection of mild steel, Ceramics International 48 (2022) 30151-30163. DOI: 10.1016/j.ceramint.2022.06.288

3) Ramay Patra, K R C Soma Raju, Birru Bhaskar, Debrupa Sarkar, Susmita Chaudhuri, Prashant Garg, **R Subasri**, Biofilm Inhibiting Nanocomposite Coatings - A

promising alternative to combat surgical site infections, J. Coatings Technology and Research 19 (2022) 1607-1711

4) K.R.C. Soma Raju, A. Jyothirmayi, L. Rama Krishna, R. Subasri, Corrosion Behaviour of Anodized and Sol-Gel Duplex Coatings on AA3004, Transactions of IIM 75 (2022) 2159-2168. https://doi.org/10.1007/s12666-022-02595-5

5) Ramay Patra, K R C Soma Raju, K Murugan, R Subasri, Effect of Heating Rate on Asperities Pattern formed in Sol-Gel derived Nanocomposite Hydrophobic Coatings, Journal of Sol-Gel Science and Technology 103 (2022) 50-61. https://doi.org/10.1007/s10971-022-05762-8

6) Swapnil H. Adsul, Shirish H. Sonawane, **R. Subasri**, Active protection of magnesium alloy AZ91D using corrosion inhibitor encapsulated halloysite nanoclay-based smart sol-gel coatings, ASTM- Mater. Perform. Charact. Vol. 11 / No. 2 / 2022 pp 171-185 doi:10.1520/MPC20200147

7) K. Pradeep Prem Kumar and **R. Subasri**, Improving the corrosion resistance of Mg alloy AZ31 by a duplex anodized and sol-gel coating, Materials Performance and Characterization, Vol. 11 / No. 2 / 2022 pp 186-199, DOI: 10.1520/MPC20200148

8) M. Arunoday, K. Pradeep Premkumar, Ravi Kumar, **R. Subasri**, Multifunctional, environmental coatings on AA2024 by combining anodization with sol-gel process, Ceramics International, 48 (2022) 10969-10978

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1) N. V. Gaponenko, Yu. D. Karnilava, E. I. Lashkovskaya, V. D. Zhivulko, A. V. Mudryi, Yu. V. Radyush, B. A. Andreev, M. V. Stepikhova, A. N. Yablonskiy, S. A. Gusev, **R. Subasri,** and D. S. Reddy, Radiative Properties of Up-Conversion Coatings Formed on the Basis of Erbium-Doped Barium Titanate Xerogels, Semiconductors, 2021, Vol. 55, No. 9, pp. 965–970
2) K. Srinivasa Rao, R. Yogapriya, K. R. C. Soma Raju, **R. Subasri**, Effect of Curing Technique on the Properties of Superhydrophobic Coatings, Trans Indian Inst Met 74 2021 1923-1932
3) Khatija Tabassum, D.S. Reddy, Vivek R. Singh, **R. Subasri**, Prashant Garg, Sol-Gel Nano-composite Coatings for Preventing Biofilm Formation on Contact Lens Cases, Translational Vision Science and Technology, Vol 10 (1) Article 4, 2021, 1-12
4) Swapnil H. Adsul, Uday D. Bagale, Shirish H. Sonawane and **R. Subasri,** "Release rate kinetics of corrosion inhibitor loaded halloysite nanotube-based anticorrosion coatings on magnesium alloy AZ91D" Journal of Magnesium and Alloys 9 (2021) 202-215

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2. **R. Subasri**, K.R.C. Soma Raju, D.S. Reddy, A. Jyothirmayi, Vijaykumar S. Ijeri, Om Prakash, Stephen P. Gaydos, "Environmental friendly Zn-Al Layered Double Hydroxide (LDH) based Sol-Gel Corrosion Protection Coatings on AA 2024-T3", J. Coat Technol. Res. 16 (5) 2019 1447–1463.
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2018 (Total-5)

1. S. Pradheebha, A. B. Ignatius, K. Srinivasa Rao, **R. Subasri**, Facile Fabrication of Durable Superhydrophobic Coatings on SS 304 for biomedical applications, International Journal of Nanobiotechnology (2018) 21-34.

2. Swapnil H. Adsul, T. Siva, S. Sathiyanarayanan, Shirish H. Sonawane, **R. Subasri**, "Aluminum pillared montmorillonite clay-based self-healing coatings for corrosion protection of magnesium alloy AZ91D" Surf. Coat. Technol. 352 (2018) 445-461.

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2. Nikhil K. Barua, T. Ragini , **R. Subasri**, Sol-Gel derived Single-Layer Zeolite-based Coatings on Glass for Broadband Antireflection Properties, J Non Cryst Solids 469 (2017) 51-55.

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2015 (total -3)

1. Alcina Johnson Sudagar, **R. Subasri**, Fabrication and Characterization of Silver/Nickel Sulphide Solar Absorber Coatings on Stainless Steel by Chemical Bath Deposition, Mater. Chem. Phys. 163 (2015) 478-484.

2. **R. Subasri**, H. Hima, Investigations on the use of nanoclay for generation of superhydrophobic coatings, Surface & Coatings Technology, 264 (2015) 121–126.

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2. S. Pavithra and **R. Subasri**, Sol-gel derived single layer zeolite-MgF_2 composite antireflective coatings with improved mechanical properties on polycarbonate, Journal of Coating Science and Technology 1 (2014) 8-16.

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2. Rekha Dom , **R. Subasri**, N. Y Hebalkar , S. A. Chary and P. H. Borse (2012) : Synthesis of hydrogen producing nanocrystalline $ZnFe_2O_4$ visible light photocatalyst using rapid microwave irradiation method, RSC Advances, **2**, 12782-12791.
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2011 (total -2)

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2010 (total -5)

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