

Brief Biography of Dr R. Subasri

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 Functional Ceramics Group of Max Planck Institut für Metallforschung, Stuttgart, Germany and at National Institute for Materials Science, Tsukuba, Japan, she returned to India and joined Advanced Research Centre International (ARCI) Hyderabad in March 2005 as a senior scientist. She has been leading the Centre for Sol-Gel Coatings at ARCI, Hyderabad since April 2006. 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 89 publications in peer reviewed international journals, 8 book chapter contributions, 10 Indian patents (granted); 4 US patents and 1 European patent (granted); 4 Indian patent applications; 2 European Patent applications (pending) 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 professional bodies namely Materials Research Society of India (MRSI), The Electrochemical Society Inc. (ECS), International Sol-Gel Society (ISGS) and Indian Institute of Metals (IIM). She received the Materials Research Society of India (MRSI) medal in February 2015 in recognition of her significant contributions to the field of Materials Research and Engineering. She is a regular reviewer for SCI Journals namely Progress in Organic Chemistry, Journal of Non-Crystalline Solids, ACS Applied Materials and Interfaces, Solar Energy Materials and Solar Cells, Journal of Alloys and Compounds, Materials Research Bulletin, Journal of Applied Electrochemistry, Applied Surface Science, Surface and Coatings Technology etc.



Her research interests include sol-gel nanocomposite coatings for different functionalities, corrosion protection; microwave sintering of ceramics and solid state electrochemistry.

Publications during last five years

2020-2021

1. 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*, accepted- Dec 2020, DOI: 10.1520/MPC20200148.
2. 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.
3. 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.

2019

1. S. Anusankari, A. Balaji Ganesh, **R. Subasri**, N. Deepa, "Optical determination of carbon dioxide and oxygen by a fluorescent membrane to evaluate the freshness of meat products", *Instrumentation Science & Technology*, <https://doi.org/10.1080/10739149.2019.1622132>
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.
3. **R. Subasri**, D. S. Reddy, K. R.C. Soma Raju, K. S. Rao, P. Kholov, N. Gaponenko, "Sol-Gel Derived Ba/SrTiO₃-MgF₂ Solar Control Coating Stack on Glass for Architectural and Automobile Applications", *Research on Chemical Intermediates* 45 (2019) 4179-4191.
4. N. V. Gaponenko, P. A. Kholov, K. S. Sukalin, T. F. Raichenok, S. A. Tikhomirov, **R. Subasri**, K. R. C. Soma Raju, and A. V. Mudryi, Optical Properties of Multilayer BaTiO₃/SiO₂ Film Structures formed by the Sol–Gel Method, *Physics of the Solid State*, 61, (2019) 397–401

2018

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. Sathiyarayanan, 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.
3. S. Pradheebha, R. Unnikannan, Ravi. N. Bathe, G. Padmanabham, **R. Subasri**, "Effect of Plasma Pretreatment on Durability of Sol-Gel Superhydrophobic Coatings on Laser Modified Stainless Steel Substrates", *J. Ad. Sci. Technol* 32 (2018) 2394-2404.
4. Swapnil H. Adsul, K. R. C. Soma Raju, B. V. Sarada, Shirish H. Sonawane, **R. Subasri**, "Evaluation of self- healing properties of inhibitor loaded nanoclay-based anticorrosive coatings on magnesium alloy AZ91D", *J. of Magnesium alloys*, 6 (2018) 299-308.

5. S. Manasa, T. Siva, S. Sathiyarayanan, K.V. Gobi, **R. Subasri**, Montmorillonite Nanoclay-based Self-Healing Coatings on AA 2024-T4, *Journal of Coatings Technology and Research* 15 (2018) 721-735.

2017

1. S. Manasa, A. Jyothirmayi, T. Siva, S. Sathiyarayanan, K.V. Gobi, **R. Subasri**, Effect of inhibitor loading into nanocontainer additives of self-healing corrosion protection coatings on aluminum alloy A356.0, *Journal of Alloys and Compounds* 726 (2017) 969-977.
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.
3. S. Manasa, A. Jyothirmayi, T. Siva, B. V. Sarada, M. Ramakrishna, S. Sathiyarayanan, K. V. Gobi, **R. Subasri**, "Nanoclay based self-healing corrosion protection coatings on aluminum, A356.0 and AZ91 substrates", *Journal of Coatings Technology and Research* 14 (2017) 1195-1208.
4. Swapnil H. Adsul, T. Siva, S. Sathiyarayanan, Shirish H. Sonawane and **R. Subasri**, "Self-healing ability of nanoclay-based hybrid sol-gel coatings on magnesium alloy AZ91D" *Surface and Coatings Technology* 309 (2017) 609-620.
5. S. Anusankari, Abishya David, **R. Subasri**, A. Balaji Ganesh "Dual sensing of pH and DO using Opto-Sol Fluorescence based sensor-A spectral Analysis", *Proceedings of the 2016 International Conference on Advanced Communication Control and Computing Technologies (ICACCCT)*, pp 454-457, ISBN No.978-1-4673-9545-8.

2016

1. **R. Subasri**, K.R.C. Soma Raju, D.S. Reddy, N.Y. Hebalkar, G. Padmanabham, Sol-gel derived solar selective coatings on SS 321 substrates for solar thermal applications, *Thin Solid Films* 598 (2016) 46-53.
2. S. Manasa, **R. Subasri**, Effect of heat treatment on the optical properties of sol-gel derived, fully dielectric solar control coatings on glass, *J. Coatings Technology and Research* 13 (2016) 623-628.

2015

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.
3. Rekha Dom, A. Sadananda Chary, **R. Subasri**, Neha Y. Hebalkar and Pramod H. Borse, Solar hydrogen generation from spinel $ZnFe_2O_4$ photocatalyst: effect of synthesis methods, *Int. J. Energy Res.* (2015) Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/er.3340

Patent applications filed/granted

1. Indian patent application titled "Biofilm inhibiting sol-gel composition for coating on substrates and process of preparing the same" R Subasri, Ramay Patra, K.R.C. Soma Raju, Susmita Chadhuri, Prashant Garg, B. Bhaskar, Debrupa Sarkar, filed as 202111001104 dtd 11-01-2021
2. Indian patent application titled "Antimicrobial aqueous based sol-gel composition for coating on substrate and process of preparing the same" by D.S. Reddy, K.R.C. Soma Raju, R. Subasri filed as 201911045386 on 07-11-19.
3. Indian patent application titled "Process for preparing durable solar control coatings on glass substrates" by R. Subasri. D.S. Reddy, K.R.C. Soma Raju, K.S. Rao filed as 201811024034 dtd 27-06-18.
4. Indian Patent application titled "An Improved Process For Preparing Durable Multifunctional Coatings On Metal/Alloy Substrates" invented by R. Subasri, S. Pradheebha, Ravi N. Bathe, G. Padmanabham, filed as 201711020529 dtd 12-06-17. (Response to FER filed in June 2019)
5. Indian Patent application titled "An Improved Coating Composition to Provide Flame Retardant Property to Fabrics and Process of Preparing The Same" R. Subasri and Abhishek Tyagi, filed as 201611040091 dtd 23-11-16 granted as 305214 on 01-01-19
6. Indian patent application titled "An improved coating composition to provide prolonged corrosion protection to anodizable metal surfaces and process of preparing the same" by R. Subasri and S. Manasa filed as 3082/DEL/2015 dtd 28-09-15. (Response to FER filed on 12-04-2020)
7. Indian patent application titled "An improved process to make coating compositions for transparent, UV blocking coatings on glass and a process of coating the same" by R. Subasri, Nabormi Mukhopadhyay and K. Murugan: filed as 1152/DEL/2014 dt 29-04-14. Response to FER filed on 14-02-2020 and granted as 338641 on 18-06-2020
8. Indian patent application entitled "An improved process for obtaining a transparent, protective coating on bi-aspheric / planoconvex lenses made of optical grade plastics for use in indirect ophthalmoscopy", invented by Raghavan Subasri, Sowtharya Logapperumal, Karuppiyah Murugan filed as 3072/DEL/2013 on 17/10/13. Response to FER filed on 06-10-19 and granted as 343375 on 05-08-2020.
9. Indian patent application entitled "An improved composition for antireflective coating with improved mechanical properties and a process of coating the same" invented by Raghavan Subasri and Pavithra Sivaprakasam, filed as 2330/DEL/ 2013 on 05/08/13. Response to FER filed on 02-01-2020 and granted as 342046 on 20-07-2020.
10. Indian patent application entitled "An improved composition for coating anodizing metal surfaces and a process of coating the same" invented by Raghavan Subasri, Nirmal Kumar, Kalidindi Rama Chandra Soma Raju, Venkateshwaran Uma, filed as 1310/DEL/2013 on 3/5/2013. Response to FER filed on 29-02-2020 and granted as 339945 on 30-06-2020
11. Indian patent application entitled "An Improved Composition for Solar Selective Coatings on Metallic Surfaces and a Process for Its Preparation and a Process for Coating using the Compositions", invented by Kalidindi Rama Chandra Soma Raju, Dendi Sreenivas Reddy, Raghavan Subasri, Gadhe Padmanabham filed as no. 3324/DEL/2011 on 22/11/2011. Response to FER filed on 19-03-2020 and granted as 340426 on 06-07-2020.

12. Indian patent application entitled "An improved abrasion resistant and hydrophobic composition for coating plastic surfaces. and a process for its preparation" invented by Kalidindi Rama Chandra Soma Raju, Dendi Sreenivas Reddy, Raghavan Subasri, Gadhe Padmanabham, filed as no. 1278/ DEL/ 2011 on 02/05/ 11. Granted as 297072 on 24-05-18
13. Indian patent application entitled "Improved Scratch and Abrasion Resistant Compositions for Coating Plastic Surfaces, A Process for their Preparation and A Process for Coating Using The Compositions" Gururaj Telasang, Kalidindi Rama Chandra Soma Raju, Raghavan Subasri, Gadhe Padmanabham filed as no. 2427/DEL/2010 on 12/10/2010. Granted as 295221 on 28-03-18.
14. Indian patent application entitled "An Improved Composition for Coating Metallic Surfaces and a Process for Coating such surfaces using the Composition" invented by Kalidindi Rama Chandra Soma Raju, Raghavan Subasri, Adduru Jyothirmayi, Gadhe Padmanabham. Granted as 290592 on 14-12-17.
15. Indian Patent No. 215156 entitled "A Process for the Preparation of MgO Stabilized Beta Alumina" invented by Raghavan Subasri, Tom Mathews, Otlingam Mohanasundaram Sreedharan, V.S. Raghunathan, Granted on 21-02-08.