Name: **R. Subasri**

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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, India with the research work carried out at Indira Gandhi Centre for Atomic Research, Kalpakkam, Tamil Nadu, India. After a brief stint as a post doctoral fellow at the Functional Ceramics Group at 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 77 publications in peer reviewed international journals, 5 book chapter contributions, two Indian patents (granted); 10 Indian patent applications and 4 US Patent applications to her credit. 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.

Her research interests include sol-gel nanocomposite coatings, microwave sintering of ceramics and solid state electrochemistry.

List of Publications: Total - 77

2017

1. S. Manasa, A. Jyothirmayi, T. Siva, S. Sathiyanarayanan, 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. Sathiyanarayanan, 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 (in press)

4. Swapnil H. Adsul, T. Siva, S. Sathiyanarayanan, 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

2014

1. M. Prekajski, M. Stojmenovic´, A. Radojkovic´, G. Brankovic´, H. Oraon, **R. Subasri**, B. Matovic, Sintering and electrical properties of $Ce_{1-x}Bi_xO_{2-d}$ solid solution, J Alloys and Compds, 617 (2014) 563-568.

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.

3. K. Mamatha and **R. Subasri**, Investigations on Coatings Generated from Silica-Zirconia Hybrid Sols Synthesized through Hydrolytic/ Non-Hydrolytic Wet Chemical Route on PMMA Substrates, Ceramics International 40 (2014) 10615-10619

2013

1. N. Kumar, A. Jyothirmayi, K. R. C. Soma Raju, V. Uma and **R. Subasri** (2013): One Step Anodization/Sol-Gel deposition of Ce^{3+}-doped silica-zirconia Self-Healing Coating on Aluminum, ISRN Corrosion, article id 424805.

2. **R. Subasri,** G. Reethika and K.R.C. Soma Raju (2013): Multifunctional Sol-Gel Coatings for Protection of Wood, Wood Material Science and Engineering (in press), 8(4), (2013) 226-233.

3. K. Murugan, **R. Subasri**, T.N. Rao, Ashutosh S. Gandhi and B.S. Murty (2013): Synthesis, Characterization and demonstration of self-cleaning TiO_2 coatings on glass and glazed ceramic tiles, Special Issue of Progress in Organic Coatings, **76**, 1756-1760.

4. Priya Anish Mathews, K.R.C. Soma Raju, Sanjay Bhardwaj and **R. Subasri** (2013): Sol-Gel Functional Coatings for Solar Thermal Applications: A Review of Recent Patent Literature, Recent Patents on Materials Science **6**, 195-213.

5. L. Sowntharya, Ravi C. Gundakaram, K.R.C. Soma Raju and **R. Subasri** (2013): Effect of addition of surface modified nanosilica into silica-zirconia hybrid sol-gel matrix, Ceramics International, **39**, 4245-4252.

6. L. Sowntharya and **R. Subasri** (2013): A comparative study of different curing techniques for SiO_2-TiO_2 hybrid coatings on polycarbonate, Ceramics International, vol. **39**, 4689-4693.

7. K. Jeevajothi, **R. Subasri**, K.R.C. Soma Raju (2013): Transparent, Non-fluorinated, Hydrophobic Silica Coatings with Improved Mechanical Properties, Ceramics International, **39**, 2111-2116.

2012

1. N. Kumar, A. Jyothirmayi and **R. Subasri** (2012): Effect of Plasma Surface Pre-Treatment on Ce^{3+}-doped GPTMS-ZrO_2 Self-Healing Coatings on Aluminum Alloy, ISRN Corrosion, Volume 2012, Article ID 506560, doi:10.5402/2012/506560

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.

3. N. Kumar and **R. Subasri** (2012): Self-healing coatings by sol-gel process: A review of recent patent literature, Recent Patents on Corrosion Science **2**, 148-163.

4. K.R.C. Soma Raju, L. Sowntharya, S. Lavanya and **R. Subasri** (2012): Effect of plasma pretreatment on adhesion and mechanical properties of sol-gel nanocomposite coatings on polycarbonate, Composite Interfaces **19**, 259-270.

5. N. Kumar, A. Jyothirmayi, K.R.C. Soma Raju and **R. Subasri** (2012): Effect of functional groups (methyl, phenyl) on organic-inorganic hybrid sol-gel silica coatings on surface modified SS316, Ceramics International **38**, 6565-6572.

6. **R. Subasri**, R. Malathi, A. Jyothirmayi and N. Y Hebalkar (2012): Synthesis and characterization of CuO-Hybrid Silica Nanocomposite coatings on SS 304, Ceramics International, **38**, 5731-5740.

7. L. Sowntharya, S. Lavanya, G. Ravi Chandra, N.Y. Hebalkar and **R. Subasri** (2012): Investigations on the mechanical properties of hybrid nanocomposite hard coatings on polycarbonate, Ceramics International, **38**, 4221-4228.

8. K. Jeevajothi, D. Crossiya and **R. Subasri** (2012): Non-fluorinated, room temperature curable hydrophobic coatings by sol–gel process, Ceramics International, **38**, 2971-2976.

9. **R. Subasri** , C.S. Madhav, K.R.C. Soma Raju and G. Padmanabham (2012): Decorative, hydrophobic sol–gel coatings densified using near-infrared radiation, Surf. Coat. Technol., **206**, 2417-2421.

10. P. Sandhyarani, M. Buchi Suresh and **R. Subasri** (2012): Investigations on the phase stability of Na^+-conducting sodium dysprosium (phospho) silicates, Ceramics International, **38** , 1435–1440.

11. S. Shalini, P. Sandhyarani, Y.S. Rao, D. Chakravarty and **R. Subasri** (2012): Wet chemical synthesis and characterization of Na^+-conducting sodium dysprosium silicates, Ceramics International, **38**, 295-300.

2011

1. Rekha Dom; R. **Subasri,** K. Radha and P.H. Borse (2011): Synthesis of solar active nanocrystalline ferrite, MFe_2O_4 (M: Ca, Zn, Mg) photocatalyst by microwave irradiation, Solid State Communications, **151**, 470-473.

2. T. Gururaj, **R. Subasri**, K.R.C. Soma Raju and G. Padmanabham (2011): Effect of plasma pretreatment on adhesion and mechanical properties of UV-curable coatings on plastics, Applied Surface Science **257**, 4360–4364.

2010

1. K. Rajeswari, U. S. Hareesh, **R. Subasri**, Dibyendu Chakravarty and R. Johnson (2010): Comparative Evaluation of Spark Plasma (SPS), Microwave (MWS),Two stage sintering (TSS) and Conventional Sintering (CRH) on the densification and Micro structural Evolution of fully Stabilized Zirconia Ceramics, Science of Sintering, **42**, 259-267.

2. **R. Subasri,** A. Jyothirmayi and D.S. Reddy (2010): Effect of plasma surface treatment and heat treatment ambience on mechanical and corrosion protection properties of hybrid sol-gel coatings on aluminum" , Surface and Coatings Technology, **205,** 806-813**.**

3. **R. Subasri,** M. Tripathi, K. Murugan , J. Revathi, G.V.N. Rao and T.N. Rao (2010): Investigations on the photocatalytic activity of sol-gel derived plain and Fe^{3+}/ Nb^{5+}- doped titania coatings on glass substrates" Materials Chemistry and Physics, **124,** 63-68.

4. Kiruthika, P., **Subasri, R.**, Jyothirmayi, A., Sarvani, K., Hebalkar,N.Y. (2010): Effect of Plasma Surface Treatment on Mechanical and Corrosion Protection Properties of UV-Curable Sol-Gel based GPTS-ZrO2 Coatings on Mild Steel, Surface and Coatings Technology, **204** 1270-1276.

5. Ratna Sunil, B., Sivaprahasam, D. and **Subasri,R.** (2010): Microwave sintering of nanocrystalline WC–12Co: Challenges and perspectives, International Journal of Refractory Metals and Hard Materials, **28**, 180-186.

2009

1. K.R.C. Soma Raju, **R. Subasri**, A. Jyothirmayi, T. Gururaj, G. Padmanabham (2009) : UV-Curable Primer-cum-Paint System for Mild Steels based on Sol-Gel Coating Technology, Proceedings of SAEINDIA International Mobility Engineering Congress and Exposition, Chennai, **Paper Number:**2009-28-0052

2. Dinesh Ram, R., **Subasri, R.**, Somaraju, K.R.C., Jayaraj, K., Vedaprakash, L., Kruparatnam, Joshi, S.V. and Venkatesan, R. (2009): Biofouling studies on nanoparticle-based metal oxide coatings on glass coupons exposed to marine environment, Colloids and Surfaces B: Biointerfaces **74**, 75-83.

3. **Subasri, R.,** Asha, M., Hembram, K., Rao, G.V.N. and T.N. Rao (2009) : Microwave Sintering of Doped Nanocrystalline ZnO and Characterization for Varistor Applications, Mater. Chem. and Phys. **115**, 677-684.

4. D. Ganguli, **Subasri, R.** and Varadharajan, R. (2009): Inorganic Dispersed Phase Composites by Sol-Gel Processing: An update, in Progress in Sol-Gel Production , **391**, 121-139.

2008-2006

1. **Subasri, R.** and Näfe, H. (2008): Texture in Na-b-Alumina due to microwave processing, *Mater. Chem. Phys.* **112**, 16-19.

2. **Subasri, R.** and Näfe, H. (2008): Phase evolution on heat treatment of sodium silicate water glass, *J. Non Cryst. Solids* **354** 896-900.

3. Näfe, H. and **Subasri, R.** (2007): Indication of bivariance in the phase system sodium zirconate/zirconia, *J. Chem. Thermodyn.* **39 (6***)* 972-977.

4. Näfe, H. and **Subasri, R.** (2007): Revision of the data on the standard Gibbs energy of formation of Sodium Zirconate, *J. Chem. Thermodyn.* **39** 22-27.

5. **Subasri, R.**, Deshpande, S., Seal, S. and Shinohara, T. (2006) : Evaluation of the performance of TiO_2-CeO_2 bilayer coatings as photoanodes for corrosion protection of copper. *Electrochem. Solid State Lett.* **9 (1)** B1-B4.

2005-2000

1. **Subasri, R.**, Roy, S., Matusch, D., Näfe, H. and Aldinger, F. (2005): Synthesis and structural characterization of a metastable mullite-like alumina phase. *J. Am. Ceram. Soc.* **88 (7)** 1740-1746.

2. **Subasri, R.** and Shinohara, T. (2005) : Investigations on the photoprotection ability of TiO_2 coated on copper. *Materials Science Forum* **475-479** 297-300.

3. **Subasri, R.** , Shinohara, T. and Mori, K. (2005): Modified TiO_2 coatings for cathodic protection applications. *Science and Technology of Advanced Materials* **6** 501-507.

4. **Subasri, R.** , Shinohara, T. and Mori, K. (2005): TiO_2 based photoanodes for cathodic protection of copper. *J. Electrochem. Soc. .* **152 (3)** B105-B110.

5. **Subasri, R.** and Shinohara, T. (2005) : Photoelectrochemical characterization of TiO_2 coatings derived from commercial sol for cathodic protection applications. S*pecial Issue of Research on Chemical Intermediates* **31** 275 – 283.

6. **Subasri, R.** and Shinohara, T. (2004) : Application of the photoeffect in TiO_2 for cathodic protection of copper. *Electrochemistry* **72 (12)** 880-884.

7. **Subasri, R** (2004): Investigations on the factors assisting a one-step synthesis cum sintering of sodium beta alumina using microwaves. *Mater. Sci. Engg B* **112** 73-78

8. **Subasri, R.** and Shinohara, T., (2004): Investigations on the applicability of SnO_2 coatings for corrosion protection to metals. *Electrochem. Solid State Lett.* **7(7)** B17-B20.

9. **Subasri, R.**, Matusch, D. , Näfe, H. and Aldinger, F. (2004) : Synthesis and characterization of $(La_{1-x}M_x)_2Mo_2O_{9-d}$; M = Ca^{2+}, Sr^{2+} or Ba^{2+}. *J. Eur. Ceram. Soc*. **24(1)** 129-137*.*

10. **Subasri, R.** and Shinohara, T., (2003): Investigations on SnO_2 -TiO_2 composite photoelectrodes for corrosion protection. *Electrochem. Comm.* **5(10)** 897-902.

11. **Subasri, R.**, Näfe, H. and Aldinger, F., (2003): On the electronic and ionic transport properties of $La_2Mo_2O_9$. *Materials Research Bulletin* **38(15)** 1965-1977.

12. **Subasri, R.** and Näfe, H. (2003): An alternative approach to characterize the equilibrium in a biphasic a-Al_2O_3/b-alumina mixture as a function of sodium activity. *Electrochimica Acta* **48(23)** 3535-3540.

13. **Subasri, R.**, Matovic, B., Näfe, H. and Aldinger, F. (2003): A low cost synthesis process for vitreous $NaAlSi_3O_8$ using sodium zeolite, *J. Non Cryst. Solids* **331(1-3)** 177-183.

14. **Subasri, R.** and Näfe, H. (2003) : Thermodynamic characterization of microwave sintered sodium beta alumina by a potentiometric technique. *Electrochem. Comm.* **5(5)** 426-430.

15. **Subasri, R.**, Mallika, C. , Mathews, T., Sastry, V. S. and Sreedharan, O. M. (2003) : Solubility studies, thermodynamics and electrical conductivity in the $Th_{1-x}Sr_x O_2$. *J. Nucl. Mater.* **312 (2-3)** 249-256.

16. **Subasri, R.**, Mathews, T., and Sreedharan, O. M. (2003) : Microwave assisted synthesis and sintering of $La_{0.8}Sr_{0.2}Ga_{0.83}Mg_{0.17}O_{2.815}$. *Mater. Lett.* **57 (12)** 1792-1797.

17. **Subasri, R.**, Mathews, T., Swaminathan, K. and Sreedharan, O. M. (2003) : Microwave assisted synthesis of $La_{1-x}Sr_xCrO_3$ and their thermodynamic characterization by fluoride emf method. *J. Alloys and Compds*. **354 (1-2)** 193-197.

18. **Subasri, R.** , Mathews, T. , Sreedharan, O. M. and Raghunathan, V. S. (2003) : Microwave processing of sodium beta alumina. *Solid State Ionics* **158 (1-2)** 199-204.

19. Mathews, T., **Subasri, R.** and Sreedharan, O. M. (2002) : A rapid combustion synthesis of MgO stabilized Sr- and Ba-beta alumina and their microwave sintering. *Solid State Ionics* **148 (1-2)** 135-143.

20. **Subasri, R.** , Mathews, T. , Swaminathan, K. and Sreedharan, O. M. (2002) : Thermodynamic Stability of Na_2ZrO_3 by solid electrolyte galvanic cell technique. *J. Nucl. Mater.* **300 (2,3)** 237-241.

21. **Subasri, R.** , Näfe, H. and Aldinger, F. (2002) : Thermoelectric power studies on MgO stabilized beta"-alumina. *J. Solid State Electrochem.* **6 (4)** 259-264.

22. **Subasri, R.** (2001) : Low temperature synthesis of sodium aluminosilicate glass - $NaAlSi_3O_8$. *Mater. Sci. and Engg. B* **86 (3)** 260-264.

23 . Mallika, C. , Sreedharan, O. M. and **Subasri, R.** (2000) : Use of air/platinum as the reference electrode in solid-oxide electrolyte emf measurements. *J. Eur. Ceram. Soc.* **20 (13)** 2297-2313.

1997-2000

1. **Subasri, R.** , Pankajavalli, R. and Sreedharan, O. M. (1998) : Thermodynamic stabilities of Ln_2BaO_4 (Ln = Nd, Sm, Eu, or Gd) by CaF_2 - based emf measurements. *J. Alloys and Compds.* **274 (1-2)** 153-156.

2. **Subasri, R.** and Sreedharan, O. M. (1998) : High temperature thermodynamic stabilities of $RCoO_3$ (R = Nd, Sm, Eu, Gd or Dy) using solid oxide- electrolyte emf technique. *J. Alloys and Compds.* **269 (1-2)** 71-74.

3. **Subasri, R.** and Sreedharan, O. M. (1997) : Thermoelectric power studies on alpha alumina-sodium beta alumina composite electrolyte. *Phys. Stat. Sol. a* **164 (2)** 679-682.

4. **Subasri, R.** , Pankajavalli, R. and Sreedharan, O. M. (1997) : High temperature stabilities of ternary oxides in the Sm-Cu-O system. *Physica C* **281 (1)** 85-90.

5. **Subasri, R.** , Sreedharan, O. M. and Bhat, N. P. (1996) : Evaluation of performance of alpha + beta alumina composite electrolyte for oxygen potential measurements. *Trans. SAEST.* **31** 59-66.

6. **Subasri, R.** and Sreedharan, O. M. (1997) : Thermodynamic stability of Li_3NbO_4 by e.m.f. measurements using a novel composite electrolyte. *Solid State Ionics* **93** 341-346.

7. **Subasri, R.** and Sreedharan, O. M. (1997) : High temperature thermodynamic stability of $LiTa_3O_8$ from emf measurements using alpha + beta alumina as solid electrolyte. *Mater. Lett.* **30** 289-292.

Other information:

1. Involved in setting up a state-of-the-art technology demonstration centre for sol-gel coatings in collaboration with a German company and undertaking projects to demonstrate scale-up feasibility of sol-gel coating technology
2. Actively involved in organizing two business opportunity workshops for entrepreneurs all over India for demonstrating the sub- processes of sol-gel coating technology

3. 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 and Applied Surface Science.

List of Patents/Patent Applications:

1. 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

2. US Patent application titled "Sol-gel coating composition including corrosion inhibitor encapsulated layered metal phosphates and related process" invented by Vijaykumar S. Ijeri, Om Prakash, S. Gaydos, **R. Subasri**, K.R.C. Soma Raju, D.S. Reddy filed as US 15/431506 dtd 13-02-17

3. 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.

4. US Patent application titled "Sol-gel coating compositions and related processes" invented by Vijaykumar S. Ijeri, Om Prakash, S. Gaydos, **R. Subasri**, K.R.C. Soma Raju, D.S. Reddy filed as US 15/231617 dtd 08-08-16

5. US Patent application titled "Sol-gel coating compositions including corrosion-inhibitor encapsulated layered double hydroxides and related processes"

invented by Vijaykumar S. Ijeri, Om Prakash, S. Gaydos, **R. Subasri**, K.R.C. Soma Raju, D.S. Reddy filed as US 15/231654 dtd 08-08-16

6. US Patent application titled "Corrosion inhibitor incorporated layered double hydroxide and sol-gel coating compositions and related processes" invented by Vijaykumar S. Ijeri, Om Prakash, S. Gaydos, **R. Subasri**, K.R.C. Soma Raju, D.S. Reddy filed as US 15/231668 dtd 08-08-16.

7. 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.

8. 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.

9. 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**, Sowntharya Logapperumal, Karuppiah Murugan filed as 3072/DEL/2013 on 17/10/13.

10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

Contribution to Books:

1. **R. Subasri** "Mechanical and Corrosion Protection Properties of Hybrid Sol-Gel Coatings on Aluminum: Effect of Plasma Surface Treatment", Chapter in a book titled " Encyclopedia of Aluminum and Its Alloys (ed) George E. Totten, Olaf Kessler, Taylor & Francis , New York (in press).
2. R. Subasri, K.R.C. Soma Raju, and K. Samba Sivudu, Applications of Sol-Gel Coatings: Past, Present and Future. Handbook of Modern Coatings Technologies-Nanocoatings, Biocoatings and Functional Layers (ed) **M . Aliofkhazraei** , Elsevier (in press)
3. **R. Subasri**, "Improving Corrosion Resistance of Metals/Alloys using Hybrid Nanocomposite Coatings Synthesized through Sol-Gel Processing, "Comprehensive guide for nanocoatings technology, Volume 3: Properties and Development, **(ed.) M . Aliofkhazraei,** Nova Science Publishers Inc., New York, USA , 2015, pp 123-142.
4. Sol-Gel Nanocomposite Hard Coatings, K.R.C. Soma Raju and **R. Subasri** in "Anti-abrasive nanocoatings: Current and future applications", **(ed.) M . Aliofkhazraei** Woodhead Publishing, Woodhead Publishing (an imprint of Elsevier), UK, 2015, pp 105-136.

5. **R. Subasri**, “Properties of nanocomposite hard coatings on polycarbonate”, in *Polymer Nanocomposite Coatings (ed.)* ***Vikas Mittal****, CRC Press (Taylor & Francis Group), USA, October 2013, pp 167-184.*
6. **R. Subasri** and T. Shinohara in “Prevention of Metal Corrosion” (ed.) **Magdalena Nunez**, pp- 275-303, Nova Science Publishers Inc., Netherlands, December 2008.

Dissertations supervised:

1. "Effect of texturing on surface wettability of sol-gel nanocomposite coatings", S, Pradheeba, **M. Tech (Nanotechnology) project**, May 2016, PSG College of Technology, Coimbatore.

2. "Evaluation of Corrosion Resistance of Sol-Gel Coatings on Aluminum Alloys AA2024-T4 and A356.0", **B. Tech (Mechanical Engg),** Summer Internship project, NIT Surathkal, May 2016.

3. "Sol-gel coating strategies to mitigate biofouling on SS-316 implant surfaces" Bharati Tanty, **B. Tech (Biotechnology)**, Summer internship project, NIT Rourkela, June 2015.

4. "Investigations on sol-gel derived flame retardant coatings on fabrics", P. Supriya, **M. Tech (Nanotechnology) Summer internship project**, June 2014, Hyderabad Central University.

5. "Investigations on sol-gel derived flame retardant coatings on textiles", T. Pratyusha, **M.Sc. (Hons) Chemistry, B.Tech (ECE),** Birla Institute of Technology and Science, Pilani, June 2014

6. "Nanoclay-based self-healing coatings on aluminum for prolonged corrosion protection", J. Noodhana, **M.Sc. (Physics and Materials Science),** PSG College of Technology, April 2014.

7. "Investigations on the Fabrication, Characterization and Durability of Silver/Nickel Sulphide Solar Absorber Coatings on SS 321 Substrates for Solar Thermal Applications", Sudagar Alcina Johnson, **B. Tech (Nanotechnology),** SRM University, Chennai, March 2014.

8. "Investigations on the use of Nanoclay for Super hydrophobic Sol-Gel Nanocomposite Coatings", HIMA HARIDEVAN, **B.Tech (Nanotechnology)** SRM University, Chennai, March 2014.

9. "Investigations on the properties of antireflective coated electro-deposited cobalt on different stainless steel substrates for solar thermal applications", Ch. Abhinay Kumar, **M.Sc (Chemistry, Integrated),** Summer Internship, IIT Kharagpur, June 2013.

10. "Solar Selective Coatings by Electrolytic Deposition of Cobalt on AISI SS 321 Substrates", Manmohan Singh Waldiya, **M.Sc. (Applied Physics),** M.S. University, Baroda, May 2013.

11. "Sol-Gel derived Zeolite-MgF_2 nanocomposite antireflective coatings on plastics", S. Pavithra, **M.Sc. (Physics and Materials Science)**, PSG College of Technology, April 2013.

12. "Development of Sol-Gel derived Antireflective Coatings", S. Keerthana, **M.Sc. (Physics and Materials Science),** PSG College of Technology, April 2012.

13. "Effect of Organic Groups (Methyl, Phenyl, Dimethyl) on Properties of Organic-Inorganic Hybrid Sol-gel Coatings on Surface Modified SS 316", Nirmal Kumar, **M. Tech (Nanotechnology),** Aligarh Muslim University, Aligarh, 2011.

14. "Wet Chemical Synthesis and Characterization of Sodium Rare Earth Silicates (Re=Dy) for Energy Storage Applications", S. Shalini, **M.Sc. (Applied Science)**, PSG College of Technology, April 2011.

15. "Synthesis and characterization of thick, decorative and hydrophobic hybrid sol-gel coatings", S. Shantini, **M. Tech**, Amity University, Noida, 2010.

16. "Synthesis and characterization of multifunctional organic-inorganic hybrid nanocomposite sol-gel coatings", R. Malathi, **M. Tech** (Nanotechnology), Anna University, Coimbatore May 2010.

17. "Corrosion Protection of Mild Steel with UV-Curable Sol-gel Based Nanocomposite Coatings", P. Kiruthika, **M. Sc**., PSG College of Technology, Coimbatore, April 2009.

18. "On the Applicability of Near Infrared (NIR) Radiation for Curing of Sol-gel Easy-to-Clean Coatings on Stainless Steel", C.S. Madhav, **B. Tech**. BITS Pilani, Goa, 2009.

19. "Photocatalytic Activity of Sol-gel Synthesized Plain and Fe^{3+}/Nb^{5+}-doped titania", Manoj Tripathi, **PG Diploma Nanotechnology**, Aligarh Muslim University, 2008.

20. "Mechanical property and electrochemical characterization of hybrid sol-gel coatings on stainless steel", Y. Nikhita, **B. Tech**, Mahatma Gandhi Institute of Technology, 2008.

21. "Microwave sintering of WC-12Co: Perspectives and Challenges",

    B. Ratna Sunil, **M. E**. Osmania University, 2007.

Lectures delivered:

1. Dr R. Subasri delivered an oral presentation titled " Layered Nanoclay-based Corrosion Protection Coatings on AA 2024-T4", authored by R. Subasri, S. Manasa, K.V. Gobi at the 13th Coatings

Science International Conference, Noordwijk, The Netherlands, June 26-30, 2017.

2. Dr R. Subasri delivered an invited lecture on Hybrid Nanocomposite Coatings Derived through Wet Chemical Route for Diverse Applications at the Belarusian State University for Informatics and Radioelectronics, Minsk, Belarus, June 20, 2017.
3. Dr R. Subasri delivered a Lecture titled "Nanoscience and Nanotechnology for Society" for Class 9 and 10 students at the Dr A.S. Rao Council Awards 2017, Hyderabad, April 29, 2017
4. Dr R. Subasri delivered a Special Lecture for M. Tech/MS/Ph D students on "Surface Engineering through Sol-Gel Nanocomposite Coatings (Basics of Processing and Applications)" at Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai on April 08, 2017.
5. Dr R. Subasri delivered an invited lecture on "Surface Engineering using Sol-Gel Nanocomposite Coatings: Basic Principles and Applications" at Refresher Course in Material Sciences , Osmania University, Hyderabad on February 10, 2017
6. Dr R. Subasri delivered a guest lecture on "Science for Society" at the Sixth Spark Innovation Awards 2016-2017, KV Rao Scientific Society, Hyderabad on January 28, 2017.
7. Dr R. Subasri delivered an invited Lecture on Sol-Gel Nanocomposite Coatings for Energy, Environment and Health Care Applications at “Recent Advances in Nanomaterials for Energy, Environment and Health Care Applications- Faculty Development Programme", held at PSG College of Technology, Coimbatore on July 23, 2016.

8. Dr R. Subasri delivered a lecture to Ph D students of Chemistry Department of BITS Pilani on April 23, 2016 on "Surface Engineering through Sol-Gel Nanocomposite Coatings"
9. Dr R. Subasri delivered a special lecture to MS and PhD Students at Department of Metallurgical and Materials Engineering, IIT Madras on April 16, 2016, on “Sol-Gel Processing: Basics, Characterization and Applications”.
10. "Surface Engineering through Sol-Gel Nanocomposite Coatings", invited lecture, National Conference on “FRONTIERS IN CHEMICAL SCIENCES AND TECHNOLOGIES (FCST)”, NIT Warangal on 29th January 2016

11. "Sol-gel derived Hybrid nanocomposite coatings for corrosion protection of metals and alloys", Seminar on Nanomaterials for Energy Sector, BHEL R&D Centre, Hyderabad, November 20, 2015.

12. "Sol-gel nanocomposite coatings for diverse applications", at Indo-Belarus Joint Workshop on Nanomaterials and Technologies, November 16 & 17, Gurgaon, 2015.

13. “Effect of Heat Treatment on the Optical Properties of Sol-Gel derived, All Dielectric Solar Control Coatings on Glass”, authored by R. Subasri, S. Manasa, G. Padmanabham, at Coatings Science International 2015, The Netherlands, June 22-26, 2015.

14. "Organic-Inorganic Hybrid Nanocomposite Coatings for Corrosion Protection of Metals and Alloys" at CECRI, Karaikudi, on June 12, 2015.

15. "Sol-Gel Nanocomposite Coating Technology: Development and Demonstration for Diverse Applications" at the International Conference

and Technology Meet on Military and Marine Applications, Pune, May 23, 2015.

16. "Multifunctional nanocomposite coatings for strategic sector" Workshop on Nanostructured Coatings (NICOP), International Conference and Technology Meet on Military and Marine Applications, Pune, May 24, 2015.

17. "Commercialization Prospects of Sol-Gel Coatings: Global Scenario" at National Conference on Sol-Gel Coatings, Velammal Engineering College, Chennai, on April 10, 2015.

18. Delivered a special lecture at Department of Metallurgical and Materials Engineering, IIT Madras on March 14, 2015, on “Sol-Gel Processing: Basics, Characterization and Applications”.

19."Science for Society" during National Science Day Celebrations, ARCI, 26-02-15.

20. “Nanocomposite coatings on plastics for improved optical and mechanical properties” at the International Conference on Advancements in Polymeric Materials (APM-2015), IISc, Bangalore, Feb 20, 2015.

21. Delivered the MRSI Medal lecture titled “Commercialization of Sol-Gel Nanocomposite Coating Technology: Challenges and Perspectives” at University of Rajasthan, Jaipur, Feb 9-11, 2015.

22. “Multifunctional Sol-Gel Nanocomposite Coatings: Development, Demonstration and Commercialization” at the National Seminar on Nanomaterials and Global Perspectives, Govt. College, Ananthapuram, A.P. on Jan 30, 2015.

23. “Sol-gel derived zeolite-MgF_2 composite antireflective coatings with improved mechanical properties on polycarbonate”, authored by R. Subasri and S. Pavithra at the Coatings Science International 2014, Noordwijk, The Netherlands, June 23-27, 2014.

24. "Organic-Inorganic Hybrid Nanocomposite Coatings by Sol-gel Process" and "Research experience in Germany as a Max Planck India Fellow" at the Excellence on Tour – An exhibition organized by the German House for Research and Innovation, New Delhi at Muffakham Jah College of Engineering and Technology, Hyderabad on April 26th, 2013.

25. "Organic-Inorganic Hybrid Nanocomposite Coatings by Sol-gel Process" at The Fifth Indo-German Frontiers of Engineering Symposium [INDOGFOE 2013] organized at Pragati Resorts, Hyderabad, March 14-17, 2013.

26. “Sol-gel functional coatings for solar thermal applications” at the International Conference on Advances Materials and Processing: Challenges and Opportunities (AMPCO 2012), IIT, Roorkee, November 2-4, 2012.

27. "Sol-gel nanocomposite coatings on plastics for improved mechanical properties" at the ICONSAT 2012, Hyderabad, Jan 20-23, 2012.

28. “Sol-gel derived Nanocomposite Coatings for Commercial Applications”, at the National Conference on Nanoscience and Engineering for Better Ceramics, NanoSEC 2011, IISc., Bangalore, June 23-24, 2011.

29. “Effect of heat treatment on mechanical and corrosion properties of low temperature curable sol-gel silica-zirconia nanocomposite coatings” authored by K.R.C. Soma Raju, D. Sreenivas Reddy, A. Jyothirmayi , R.

Subasri and “Hybrid Sol-gel Coatings for Corrosion Protection of Low Cost Stainless Steels” authored by R. Subasri , A. Jyothirmayi at the XVI International Sol-gel Conference at Hangzhou, China from August 28 - September 2nd, 2011.

30. “Nanocomposite coatings derived from Chemical Nanotechnology Route for Consumer Products” at Department of Resource Management and Consumer Sciences, College of Home Science, ANGRAU, Hyderabad on March 31, 2011.

31. "Functional Nanocomposite Coatings by Sol-gel Technology", R. Subasri and G. Padmanabham, International Conference on Recent Trends in Materials Science and Technology, ICMST – 2010, Trivandrum, October 29-31, 2010.

32. "Technology Demonstration of Sol-gel Coatings for the Commercial Sector” at the National Conference on “Chemical Process Plants – Impact on Environment”, Vignan University, Guntur, March 2010.

33. “Investigation on the effect of surface pretreatment and heat treatment ambience on corrosion resistance of sol-gel hybrid coatings on aluminum” authored by T. Chandrasekhar, R. Subasri, A. Jyothirmayi and D.S. Reddy, lecture delivered at National Conference on Recent Advances in Surface Engineering, NAL, Bangalore on February 26&27, 2009.

Affiliation to Professional societies:

1. **Life member of the Materials Research Society of India (MRSI)**
2. **Active member of the International Sol-gel Society (ISGS)**
3. **Life member of Indian Institute of Metals (IIM)**
4. **Member of The Electrochemical Society Inc., USA (ECS)**