

Shradha Agarwal, PhD
Associate Professor
Department of Nuclear Engineering and Radiation Science, and Computer Science
University of Missouri Science and Technology
Rolla, Missouri
Contact: sabrc@mst.edu

FIELD OF SPECIALIZATION

I am an Associate Professor in the Departments of Nuclear Engineering and Radiation Science and Computer Engineering at the University of Missouri Science and Technology, with significant expertise in both materials science and artificial intelligence (AI). My research focuses on ion/neutron irradiation effects on advanced nuclear ceramics like ZrC, TiN, and SiC-based accident-tolerant fuel cladding.

I am the Founder and Head of a Stealth Startup, where I develop AI-based solutions specializing in Large Language Models (LLMs) and integrating physics principles into AI innovations. I lead workshops, boot camps, and courses that provide hands-on learning experiences, and offer AI-driven solutions to small companies like Cloud Forest and Air Mason. Previously, as Head of AI at a cybersecurity startup which secured funding of \$9 M Series A, I pioneered prompt engineering, Retrieval-Augmented Generation (RAG), and multiclass subject classification systems using advanced LLMs such as Zephyr, Mistral, and LLaMA.

Before my AI ventures, I served as a Staff Scientist at Tata Steel's Swinden Technology R&D Centre in the UK. There, I developed graphene-based coatings for steels and gained hands-on experience in physical metallurgy, specializing in testing the mechanical properties of steels, including strength, fracture, torsion, and creep. As Head of the SEM Facility, I managed advanced material characterization techniques like electron microscopy, spectroscopy, and nanoindentation.

In addition to my industrial and startup experience, I teach undergraduate, graduate, and PhD-level courses in Physics, Nuclear Engineering, and Machine Learning, and lead cutting-edge AI-driven research initiatives in Computer Vision and Generative AI.

EDUCATION

2011 - 2014 **PhD in Physics, University of Paris SUD, France**
Host institute: CEA (French Commission of Atomic and Alternative Energies), Saclay, France
Topic: Helium mobility in advanced nuclear ceramics.
Supervisor: Dr. Patrick Trocellier.

Dissertation on the study of helium mobility and the microscopic analysis of deformation and fracture behavior caused by helium bubbles. Calculation of various diffusion and migration energies of helium under different experimental conditions by applying theoretical models on experimental data obtained from IBA. Investigation of the microstructural evolution due to helium accumulation by various characterization techniques (TEM, nano-indentation, tensile frames, IBA, SEM, Raman spectroscopy, X-ray diffraction, nano-indentation and laser profilometry). Established and validated an approach to calculate pressure built by helium gas inside the bubbles. Understanding the role of grain boundaries, native vacancies and porosity on helium release mechanism from ceramics. Peer-reviewed articles published in reputed journals; oral communications in international conferences.

2010 - 2011 **Masters in Nuclear Energy, University of Paris SUD, France**
Specialization: Nuclear Plant Designing (2nd year)

2009 - 2010 **Master of Technology, University of Delhi, India**
Specialization: Nuclear Science & Technology (1st year)

2006 - 2009 **B.Sc. (honours) in Physics, University of Delhi, Hindu College, India**

RESEARCH EXPERIENCE

June 2024 - now

Stealth Startup (Sacramento, CA)

CEO and founder

- Providing AI-based solutions for small companies, including Cloud Forest and Air Mason.
- Building AI-based product on ed-tech.
- Leads workshops, bootcamps, and courses with practical, hands-on learning experiences for students and professionals.

Apr. 2024 - June 2024

Stealth Cybersecurity Startup (\$9M Series A, Mountain View, CA)

Head of AI and ML

Led advanced projects focused on Large Language Model (LLM) applications, including:

- Prompt engineering for optimizing LLM responses.
- Retrieval-Augmented Generation (RAG) using textbook data with cosine similarity, FAISS, Streamlit, and LangChain.
- Development of robust prompt injection detection mechanisms.
- Developed a multiclass subject classification system using synthetic and textbook data, employing advanced LLMs (Zephyr, Mistral, LLaMA) for data labeling and performance comparison.
- Led image classification projects and text extraction from images using OCR, enhancing LLM capabilities and accuracy in handwriting extraction from images.

Jun. 2019 -Aug. 2024

University of Tennessee, Knoxville, USA

Assistant Research Professor

Department of Nuclear Engineering

Working on various radiation effects project for experimental study of ion/neutron irradiation and gas diffusion on micro-structure, physical and mechanical properties of advanced nuclear materials. This include project such as; simulating neutrons with accelerated particles (SNAP) with Prof. G. Was, University of Michigan; and on using SRIM for correctly calculating dpa with Prof. Steve Zinkle (UTK) and Roger Stoller (ORNL). Received UTK Start funding as co-PI to investigate “High temperature, damage-tolerant hybrid materials through precision additive manufacturing of multi-phase architectures”. Leading a novel research effort in applying artificial intelligence models to characterise the radiation defects in nuclear materials. Training students, establishing collaborations and publishing papers (one publication submitted and two others are under final preparation). Designed and taught the new course (NE-597) on “learning TEM and applying ML models to characterise radiation defects in microscopy images of nuclear materials”. Received competitive grants as ‘principal investigator’ given by the ORNL Program Manager of the U.S. DOE Advanced Fuels Campaign to work on ion irradiation-induced structural disorder and thermal conductivity changes of intermetallic compounds. Teaching graduate and undergraduate courses on “Fundamentals of irradiation effects in nuclear materials (NE-540 2020 (full class); 2022 (shared class with Dr. Maik Lang))”. Supervising and training graduate students in the field of radiation material science. Writing book chapters; reviewer of various journals in the field of radiation effects and guest editor of journal of materials.

June. 2018 – June. 2019

University of Tennessee, Knoxville, USA

Post-Doctoral Researcher

Department of Nuclear Engineering

Supervisor: Prof. William J. Weber and Prof. Steven J. Zinkle

Evaluating the radiation tolerance of advanced nuclear ceramics such as TiC and SiC/SiC composites for nuclear structural applications. Characterising ion and neutron irradiated specimens in electron microscopes based at Center for Nanophase Materials Sciences (CNMS) and Low Activation Materials Development and Analysis (LAMDA) at Oak Ridge National Laboratory (ORNL).

Supervising and training graduate students in the field of radiation material science.

Writing various funding proposals: NEUP and RTE.

Teaching radiation effects courses in Department of Nuclear Engineering.

May. 2017-May. 2018

University of Tennessee, Knoxville, USA

Post-Doctoral Researcher

Department of Material Science and Engineering

Supervisor: Prof. William J. Weber and Prof. Steven J. Zinkle

Development of SiC based accident tolerant fuel (ATF) cladding for Light Water Reactors (LWR).

Mar. 2015 - Mar. 2017

Tata Steel, Swinden Technology R&D Centre, Rotherham, UK

Staff scientist in Material Characterisation & Pilot Manufacturing

Head of the SEM facility.

Materials scientist/Metallurgist and electron microscopy specialist

Hands-on-experience on testing variety of steels for properties such as strength, fracture, torsion, tensile, creep, compression.

Project leader on exploring future opportunities for steel in energy and power sector.

Initiated the projects on reinforcing steel with graphene and lead the project on the development of graphene/graphene oxide dispersed steels (GODS). Involved in graphene-based coatings for strip steels and packaging steel. Responsible for the development of characterization procedure of graphene produced at Tata Steel and benchmarking experiments. Steel metallurgy and development of precipitation hardened hot-finished fine-grained structural steels.

Oct. 2011- Dec. 2014

CEA (French Commission of Atomic and Alternative Energies), Saclay, France

PhD researcher in the triple ion beam JANNuS irradiation facility

PhD thesis work on helium mobility in transition metal ceramics.

Apr. 2011-Aug. 2011

CEA (French Commission of Atomic and Alternative Energies), Saclay, France

Masters intern at National Henri Becquerel Laboratory.

Determination of absorbed dose standards using a water calorimeter for proton therapy.

Simulation of experimental facility with MCNPX (Monte Carlo N-Particle Transport Code).

Jan. 2011-Mar. 2011

ENSTA - Paris Tech, Paris, France

Intern at Mechanical Engineering Department.

Study of mechanical behaviour of the pool of an experimental nuclear reactor submitted to a steam explosion, using finite element calculation model CASTEM.

May 2010-Jul. 2010

IGCAR (Indira Gandhi Centre for Atomic Research), Kalpakkam, India

Intern at Nuclear Safety and Engineering Department.

Nuclear safety & engineering: study of sodium fire scenarios (pool and spray fires) in sodium cooled fast breeder reactors. Commissioned sodium fire study facility.

TEACHING AND SUPERVISION EXPERIENCE

- Jointly supervising various PhD student at the University of Tennessee, Knoxville, USA, with Prof. Steven J. Zinkle.
 - Zehui Qi, PhD subject: He embrittlement in Ni-based alloy.
 - Qinyun Chen, PhD subject: Radiation effects in intermetallic compounds.
 - Pengcheng Zhu, PhD subject: Irradiation induced hardening in Fe and Fe based alloy.
- Supervised PhD student, James Brechtel, from the University of Tennessee, Knoxville, USA, with Prof. Steven J. Zinkle. PhD defended in radiation effects in bulk metallic glasses- year 2019.
- Trained PhD student, Yajie Zhao, from the University of Tennessee, Knoxville, USA on characterisation of radiation effects using Raman Spectroscopy, SEM and FIB preparation.
Topic: Radiation effects in SiC/SiC composites.
- Teaching graduate and undergraduate courses at the University of Tennessee, Knoxville.
Subject:
 - NE-597: Learning TEM and applying ML models to characterise radiation defects in microscopy images.
 - NE-540: Fundamentals of Irradiation Effects in Nuclear Materials.
 - NE-440: Introduction to Nuclear Fuels & Materials.
- Provided extensive electron microscopy trainings at Tata Steel to co-workers (2014-2016).
- Supervised two students James Russell and Jordan Marinaccio from University of Swansea, UK, on practical TEM usage for characterising precipitates in steels at Tata Steel TEM facility (2015).
- Supervised internship student, Emilie Jouanny, at Jannus-CEA Saclay, on the use of ion beam analysis for helium diffusion study in nuclear ceramics (2012-2013).
- Taught classes of 30-35 students in self-run coaching institute for under-graduates and engineering entrance exams, India (2006-2009).
Subjects: Engineering physics & mathematics.

SCIENTIFIC FACILITY MANAGEMENT

- Served as a liaison (Co-manager) of the material characterisation laboratory at Joint Institute of Advanced Materials ((JIAM-258). consisting of state-of-art tensile machine, mechanical and electro-polishing system. Duration: since 2019.
 - Managed the operations and maintenance of SEM facility of Tata Steel at Rotherham, UK, consisting of state-of-art SEMs. Duration = 2 years.
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ACADEMIC DISTINCTIONS

- Qualified **IIT-JAM 2009** (Indian Institute of Technology - Joint Admission test to Masters), position held among top 10 % students nationwide.
 - Among twelve students selected from India in the highly competitive international master's programme 'Masters in Nuclear Energy', managed by the top institutes of France (Ecole Polytechnique and Ensta-Paris tech).
 - Visiting scientist and associate fellow of the Warwick Manufacturing Group (WMG) at the University of Warwick, UK.
 - EIFFEL excellence scholarship recipient given to selected student from developing countries by the French ministry of foreign affairs and international development.
 - Selected by CEA-Saclay among top doctoral students based on their performance to express their scientific experience. <http://internationaloffice.ceasaclay.com/spip.php?article317&lang=en>.
 - Awarded full funding from CEA-Saclay, France, for the Ph.D. studies.
 - University of Delhi master's scholarship recipient.
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RESEARCH GRANTS

- **UTK Start funding 2023: \$120000, PI: S. Agarwal**
Topic: Received UTK Start funding as PI to investigate "In-situ Characterization of Radiation Effects on Materials through Live Video Analysis with Machine Learning".
- **UTK Start funding 2020: \$80000, Co-PI: S. Agarwal**
Topic: Received UTK Start funding as co-PI to investigate "High temperature, damage-tolerant hybrid materials through precision additive manufacturing of multi-phase architectures".
- **U.S. Department of Energy's Advanced Fuels Campaign (AFC) 2020: Received funding from ORNL program manager of AFC. 10/1/2019-12/1/2020, \$100000, PI: S. Agarwal**
Topic: Correlating irradiation-induced thermal conductivity modification with structural disorder in intermetallic compounds.
- **Nuclear Science User Facility (NSUF) 2019: Received funding for Rapid Turn-around Experiment (RTE) proposal. 06/1/2019-12/1/2019, \$60000, PI: S. Agarwal**
Topic: In-situ irradiation study of carbides/nitrides/carbo-nitrides in additively manufactured ferritic-martensitic steels.
- **Tata Steel R&D scientific council funding 2016: Shared industrial research budget from the Tata Steel R&D scientific council. 11/1/2015-12/1/2016, £120000, Co-PI: S. Agarwal**
Topic: Feasibility of graphene coated and graphene strengthened metals.

TRAVEL GRANTS

- Received various competitive travel grants from the central office of CEA (French Commission of Atomic and Alternative Energies-France) and various conference committees such as Ion Beam Analysis Francophone (IBAF-France) and Ion Beam Modification of Materials (IBMM-Belgium), to participate in numerous invited oral talks and poster presentations at different international conferences between 2011 – 2021, mentioned towards the end of the CV.
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SCIENTIFIC COLLABORATORS AND PARTNERS

- *Oak Ridge National Laboratory (ORNL), USA*: Established collaboration to study neutron irradiated specimen in LAMDA. Hands on experience in using various equipments (TEM, SEM and FIB) based at LAMDA and CNMS, ORNL. Co-PIs on DOE funding proposal with various scientists.
 - *Los Alamos National Laboratory (LANL), USA*: Performing ion beam experiments in ion beam materials laboratory (IBML) based at LANL to study helium mobility in bulk metallic glasses.
 - *Culham Centre for Fusion Energy (CCFE), UK*: Established research collaboration to perform nano-indentation and dilatometry experiments on ion irradiated specimens.
 - *Kyoto University, Japan*: Collaboration with Kyoto University for high temperature (> 1000 °C) ion irradiation campaign on ultra-high temperature ceramics (currently focusing on titanium carbide).
 - *Centre for Nuclear Science and Materials Science (CSNSM), JANNuS-Orsay, France*: In process of establishing a collaboration with JANNuS-Orsay dual beam in-situ ion irradiation facility for in-situ irradiation study of TiC.
 - *French Commission of Atomic and Alternative Energies (CEA-Saclay), France*: Current collaboration with CEA to receive ultra-high temperature ceramics of ultra-high purity for ion irradiation experiments.
 - *Warwick Manufacturing Group (WMG) at the University of Warwick, UK*: Worked collaboratively with WMG, and with Tata Steel R&D in Netherlands on a joint Tata Steel-WMG industry-university partnership project on low density steels development for automotive and aerospace applications. 2015-2017.
 - *University of Swansea, UK*: Collaborated with University of Swansea, UK, as a part of Tata Steel R&D industry - university partnership for advanced steel characterization and building support R&D for Port Talbot steel plant in Wales, at Swansea campus. Shared electron microscopy facilities and know-how. Provided theory and practical TEM training to University of Swansea PhD students. 2015-2016.
 - Scientific partners and contacts in leading research institutes working on nuclear materials worldwide: Oak Ridge National Lab (ORNL), University of Tennessee in USA, CEA-Saclay, University of Paris SUD in France, University of Sheffield, Brookhaven National Laboratory, positron annihilation spectroscopy lab at CEMHTI – Orleans, JANNuS multi-beam irradiation facility at CEA and CSNSM, Shimane University and Kyoto University in Japan, Pierre and Marie Curie University - Paris 6.
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PROFESSIONAL MEMBERSHIPS AND REVIEWER

- Organizer of the first workshop in UTK-ORNL on ‘*Deep Learning for Microscopy Image Analysis in Materials Science: Advancing Research and Education Workshop*’.
- Co-editor of the guest journal in *JOM-2020 ‘In-Situ Characterization Techniques for Investigating Nuclear Materials’*
- Published scholarly book chapter in *Comprehensive Nuclear Materials-2020 on the ‘Experimental studies on Primary Damage Formation’*.
- Member of TMS Nuclear Materials Committee: New member 2019.
- The American Ceramic Society (ACerS), USA: New member 2018.
- Member of The Minerals, Materials and Metals Society (TMS), USA: Member since 2014.
- Materials Research Society (MRS), USA: Member since 2014.

- Member of the scientific council R&D, Tata Steel UK.
 - Reviewer of Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms.
 - Reviewer of Journal of Nuclear Material.
 - Reviewer of Scientific Reports.
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LANGUAGES

English (fluent), **Hindi** (mother tongue), **French** (fluent in spoken, working knowledge in reading and writing).

SOFT SKILLS

Knowledge of research methodologies, research project management, project proposal writing for research grants, strong communication skills, scientific writing, leadership, flexible.

COMPUTER SKILLS

Applications: Microsoft office suite, Adobe Photoshop, Gatan microscopy suite, Sigma Plot, SIMNRA (ion beam data analysis software), Stopping and range of ions in matter (SRIM), LYX, Matrox, Penelope Monte-Carlo simulation code; programming language: C++/C, Pascal; operating systems: Windows, Mac.

SPECIAL TRAININGS AND COURSES

- International school in nuclear engineering: Materials for nuclear reactors, fuels and structures. Nov. 2012
INSTN (Institut National des Sciences et Techniques Nucléaires), CEA-Saclay, France.
 - Symposium on irradiation effects on structural materials for nuclear reactors. Sep. 2012
University of Seville, Spain.
 - Operations and nuclear engineering training on Balyais EPR light water commercial reactor. Feb. 2011
Bordeaux, France.
 - Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, India. Jul. 2010
In-plant training: Operations and safety of sodium cooled Fast Breeder Test Reactor (FBTR).
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SELECTED PEER REVIEWED PUBLICATIONS (IN INVERSE CHRONOLOGICAL ORDER)

- Comparative Analysis of Open-Source Tools for Efficient Data Extraction from Unstructured PDFs for LLM Applications. **S. Agarwal**, Narayan Adhikari. *Article Submitted*.
- Application of deep learning semantic segmentation model to helium bubbles and voids in nuclear materials. **S. Agarwal**, A. Sawant, M. Faisal, S. E. Copp, J. Reyes-Zacarias, Yan-Ru Lin, S. J. Zinkle. Engineering Applications of Artificial Intelligence 126, 106747.
- Comparison of different versions of YOLO to detect helium bubbles and voids in nuclear materials. **S. Agarwal**, A. Sawant, M. Faisal, S. E. Copp, J. Reyes-Zacarias, Yan-Ru Lin, S. J. Zinkle. Under preparation (at final stage; co-authors review).
- Application of deep learning model to detect helium bubbles and voids in in-situ TEM videos. **S. Agarwal**, T. Wong, M. Ziatdinov, S. G. Kalinin, S. J. Zinkle. Under preparation (developing code).
- Toward accurate evaluation of bulk hardness from nanoindentation testing at low indent depths. P. Zhu, Y. Zhao, **S. Agarwal**, J. Henry, S. J. Zinkle. Materials & Design 213 (2022), 110317.

- On the use of SRIM for calculating vacancy production: Quick calculation and full-cascade options.
S. Agarwal, Y. Lin, C. Li, R. E. Stoller, S.J. Zinkle.
Nuclear Instruments and Methods in Physics Research Section B: Beam 503 (2021) 11-29.
- An exploratory study on helium mobility in amorphous and crystallized bulk metallic glasses.
J. Brechtel, **S. Agarwal**, X. Hu, D. Chen, M. Chancey, H. Bei, Y. Q. Wang, S. J. Zinkle.
Journal of Nuclear Materials 543 (2021) 152617.
- Experimental Studies on Primary Damage Formation.
Agarwal, Shradha and Zinkle, Steven J. In: Konings, Rudy JM and Stoller Roger E (eds.).
Comprehensive NuclearMaterials 2nd edition, 2020, vol. 1, pp. 74-90. Oxford: Elsevier.
- Neutron irradiation-induced microstructure damage in ultra-high temperature ceramic TiC.
S. Agarwal, T. Koyanagi, A. Bhattacharya, L. Wang, Y. Katoh, X. Hu, M. Pagan, S. J. Zinkle.
Acta Materialia 186 (2020) 1-10.
- Investigation of the mechanical and microstructural evolution of a Cu based bulk metallic glass during ion irradiation.
J. Brechtel, **S. Agarwal**, M.L. Crespillo, J. Salasin, T. Yang, H. Bei, S.J. Zinkle.
Intermetallics 116 (2020) 106655.
- Effects of irradiation spectrum on the microstructural and mechanical properties of bulk metallic glasses.
J. Brechtel, M.L. Crespillo, **S. Agarwal**, H. Bei, S.J. Zinkle.
Journal of Nuclear Materials 152 (2020) 84.
- In-Situ Characterization Techniques for Investigating Nuclear Materials
P. Hosemann, P. Frazer, **S. Agarwal**, C. A. Yablinsky.
JOM 72 (2020) 2030-2031.
- Revealing irradiation damage along with the entire damage range in ion-irradiated SiC/SiC composites using Raman spectroscopy.
S. Agarwal, Q. Chen, T. Koyanagi, Y. Zhao, S. J. Zinkle, W. J. Weber.
Journal of Nuclear Materials 526 (2019) 151778.
- Helium induced microstructure damage, nanoscale grain formation and helium retention behaviour of ZrC.
S. Agarwal, A. Bhattacharya, P. Trocellier, S. J. Zinkle.
Acta Materialia 163 (2019) 14-27.
- Evolution of the microstructural and mechanical properties of BAM-11 bulk metallic glass during ion irradiation and annealing.
J. Brechtel, **S. Agarwal**, M.L. Crespillo, T. Yang, H. Bei, S.J. Zinkle.
Journal of Nuclear Materials 523 (2019) 299-309.
- Radiation tolerance of SiC based composites for accident tolerant fuel (ATF) applications.
S. Agarwal, G. Duscher, Y. Zhao, M. L. Crespillo, Y. Katoh, W. J. Weber.
Acta Materialia 161 (2018) 207-220.
- An experimental study of helium diffusion and helium induced microstructural evolution in ion implanted polycrystalline titanium nitride.
S. Agarwal, P. Trocellier, D. Brimbil and S. Vaubailon.
Acta Materialia 121 (2016) 1-14.
- IBA studies of helium mobility in nuclear materials revisited.
P. Trocellier, **S. Agarwal**, S. Miro, S. Vaubailon, F. Leprêtre and Y. Serruys.
Journal of Nuclear Materials 467 (Part 1) (2015) 68-81.
- Diffusion and retention of helium in titanium carbide.
S. Agarwal, P. Trocellier, S. Vaubailon and S. Miro.
Journal of Nuclear Materials 448 (1-3) (2014) 144-152.

OTHER SIGNIFICANT PUBLICATIONS

- Steel opportunities in energy and power sector.
S. Agarwal, R. Cooper.
Tata Steel R&D, Internal Report, 2016.
- Microstructure analysis of Celsius™ 420 high performance structural steel.
S. Agarwal, D. Crowther.
Tata Steel R&D, Internal Report, 2015.
- Helium migration data processing in TiC using SIMNRA and AGEING codes.
S. Agarwal, P. Trocellier, S. Miro, Y. Serruys and S. Vaubailon.
CEA-Saclay, SRMP Annual Technical Journal, 2013.
- Helium mobility in transition metal ceramics under thermal treatment.
S. Agarwal, P. Trocellier, S. Miro, Y. Serruys and S. Vaubailon.
CEA-Saclay, SRMP Annual Technical Journal, 2012.

SELECTED CONFERENCE COMMUNICATIONS

- Understanding application of Retrieval Augmented Generation in cybersecurity. March 2024
S. Agarwal.
AI CONFERENCE by Nvidia GTC 2024, San Jose, USA.
- Application of deep learning semantic segmentation model to helium bubbles and voids in nuclear materials. March 2023
S. Agarwal, A. Sawant, M. Faisal, S. E. Copp, J. Reyes-Zacarias, Yan-Ru Lin, S. J. Zinkle.
TMS Spring meeting (The Minerals, Metals, and Materials Society), San Diego, USA.
- Radiation effects in High Entropy Alloys. Oct. 2021
S. Agarwal, S. J. Zinkle.
MS&T meeting (Materials Science and technology), Columbus, Ohio, USA.
- Ion-irradiation-induced structural disorder and thermal conductivity changes of intermetallic compounds. Mar. 2020
S. Agarwal, G. Duscher, Y. Zhao, S. J. Zinkle.
TMS Spring meeting (The Minerals, Metals, and Materials Society), San Diego, USA.
- On the use of SRIM for calculating defect production: Quick calculation versus Full-cascade option. Sep. 2019
S. Agarwal, Y-Ru Lin, C. Li, R.E. Stoller, S. J. Zinkle.
The Nineteenth International Conference on Fusion Reactor Materials (ICFRM-19), San Diego, USA.
- Indentation mechanical properties of thermally aged and ion irradiated FeCr Alloys. Oct. 2019
S. Agarwal, Y-Ru Lin, C. Li, R.E. Stoller, S. J. Zinkle.
MiNES- Materials in Nuclear Energy Systems, Baltimore, Maryland, USA.
- Radiation effects in SiC-SiC composites irradiated at 400 dpa. Mar. 2019
S. Agarwal, G. Duscher, Y. Zhao, W.J. Weber.
TMS Spring meeting (The Minerals, Metals, and Materials Society), Phoenix, USA.

- Ion irradiation effects on SiC-SiC composite for ATF application. Mar. 2018
S. Agarwal, G. Duscher, Y. Zhao, W.J. Weber
TMS Spring meeting (The Minerals, Metals, and Materials Society), Phoenix, USA.
- A multiscale characterisation of radiation effects in SiC-SiC composite. Jan. 2018
S. Agarwal, G. Duscher, Y. Zhao, W.J. Weber
42nd International Conference and Expo on Advanced Ceramics & Composites (ICACC), Daytona Beach, USA.
- Radiation effects in SiC-SiC composite. Oct. 2017
S. Agarwal, G. Duscher, Y. Zhao, W.J. Weber
MS&T meeting (Materials Science and technology), Philadelphia, USA.
- Graphene reinforced strengthened steel. Oct. 2015
S. Agarwal, A. Bhattacharya, G. Tirumalasetty
Tata Steels STIR New Idea generation workshop, IJmuiden Technology Centre, The Netherlands.
- Helium mobility in transition metal ceramics. Sep. 2014
S. Agarwal, P. Trocellier, Y. Serruys and S. Vaubailon.
19th International Conference on Ion Beam Modification of Materials (IBMM), Leuven, Belgium.
- IBA analysis of helium effects in TiN. Nov. 2013
S. Agarwal, P. Trocellier, Y. Serruys and S. Vaubailon.
MRS fall meeting (Materials Research Society), Boston, USA.
- Helium mobility in TiN and TiC. Sep. 2013
S. Agarwal, P. Trocellier, Y. Serruys and S. Vaubailon.
11th European Conference on Accelerators in Applied Research and Technology (ECAART), Namur, Belgium.
- Use of IBA in Jannus to study helium mobility in nuclear ceramics Oct. 2013
S. Agarwal, P. Trocellier, Y. Serruys and S. Vaubailon.
EMIR User days conference, Laboratory of Linear Accelerator (LAL), University of Paris SUD, Orsay, France.
- Helium mobility in TiN and TiC. May. 2013
S. Agarwal, P. Trocellier, Y. Serruys and S. Vaubailon
European Materials Research Society (EMRS) - Spring meeting, Strasbourg, France.
- Diffusion of helium in TiC. Dec. 2012
S. Agarwal, P. Trocellier, Y. Serruys and S. Vaubailon
Ion Beam Analysis Francophone (IBAF), Cadarache, France.