ASM International

**Residual Stress Technical Committee (ASM-RSTC) - Sept. 1, 2023 – Aug. 31, 2024**

**Beth Snipes – Chair,** **beth.snipes@tec-materialstesting.com**

**Seung-Yub Lee – Vice Chair,** **seungyub.lee@prattwhitney.com**

**Rajan Bhambroo – Secretary,** **Rajan.Bhambroo.18@gmail.com**

**James Pineault – Past Chair,** **xrdlab@protoxrd.com**

**Notes for ASM-RSTC Meeting 25 October 2023**

Attendees:

Kevin Sala, Beth Snipes, Jason Scheuring [Kaiser Aluminum], Scott Henry, Thomas Lachtrupp, Toshi Suzuki, Vasisht Venkatesh, Casey Gales, Rajan Bhambroo, Ben Wang, lynn ferguson - dante solutions, Chase Everett - John Deere, Dale Ball, Eric Burba, AFRL, Zhenzhen Yu, Chris Misorski, Yi Yang, Dave Dobbins – CNH, Gabe Grodzicki (Proto Mfg Inc),18172055614, Iuliana Cernatescu, Rick Lopez – Deere, Steve E Ferdon, Amy Nolan, Elvin Beach, Seung-Yub Lee, Eckehard Müller, Gary Styger, Nikolaj Zangenberg, John Bouchard, Gary, James Pineault.

New Members: Kevin Sala, RBC Bearings

TODAYS AGENDA:

Action items for Members

Subcommittee reports

New Business

Technical Topic

Adjourn

Action items for members:

1. Please see “Relevant Links and Materials” section at the end of this document for relevant links https://www.asminternational.org/residual-stress-technical-committee/
2. Recruit new members, especially developing engineers and students – if you have anyone in mind, feel free to invite them!
3. New members: Please fill in roster information form if you have not already – thanks! Link: <https://forms.gle/3YwCTEWGz9NtG5nHA>
4. Suggest presentation topics for future meetings. Student and “Back to basics” presentations are especially welcome. Please contact Beth Snipes, beth.snipes@tec-materialstesting.com
5. A feedback form/survey will be distributed to the membership to solicit feedback – this will be coming shortly.

**Standing Agenda for Residual Stress Committee:**

1. Subcommittee reports
	1. Industry Standards (Dale Ball, Chair, dale.l.ball@lmco.com)

SAE AMS RS AS7045 - Residual Stress Measurement and Classification, Metallic Structural Alloy Products and Finished Parts has been released and is publicly available. Dale provided talk on the standard during the meeting.

ISO TC60 - Ronnie Rego developing the ISO TC60 standard (technical committee for gear design) – good feedback on 3 Phase plan through 2030. New updates – 1st phase will be to demonstrate mixing RS measurement and fatigue testing with simulation – inputs will go into design aspects – adjust geometry to benefit from RS. More or less open at this point – return after September from Germany with hopefully more interested parties – 18 month project with results expected by September 2024 – there will be 2 campaigns of measurement with reviews after each.

Confirmed some partnership and brought new partners on board. Testing to be initiated soon at Newcastle University. TW Aachen and Munich to be partners as well.

CEN Technical Committee 138 (NDT) – Have opened the Working Group 10. In the process of sending out draft technical specification for comments. Deadline is November 24 for submission followed by vote. More like a guideline document.

Nikolaj Zangenberg will update ASM RSTC on CEN Technical Committee when more information is available. Technical Specification (TS) on diffraction using synchrotron – looking for collab. in APS or Chess? Put in touch – also to contact E Mueller. Rajan Bhambroo to forward SLAC contact to Nicolaj.

ASTM E08.04.06 Task Group is developing a new “Standard Guide for Incorporating Residual Stresses into Structural Design and Sustainment,” headed by T. J. Spradlin. Any ASTM member can join E08 and assist in editing, voting on ballots, etc. No new updates. Next meeting is in November.

ASTM E2860 updated version is being developed by the E28.13 subcommittee. Scott McCarthy is heading this effort.

ASTM E1928-13(2019) Standard Practice for Estimating the Approximate Residual Circumferential Stress in Straight Thin-walled Tubing is being updated by the E28.13 subcommittee. Gary Schajer is heading this effort.

* 1. Residual Stress Handbook – Volume 25 (Dave Furrer, Chair, david.furrer@prattwhitney.com Assisted by Amy Nolan at ASM, amy.nolan@asminternational.org)

Working to finalize the authors for the chapters. Compared to last month, there has been progress on confirmed authors. Still a need for authors to be confirmed for the remaining sections. Division Editor Teams are working to finalize authors. The goal is to be >80% before the end of the year. Handbook will be two volumes. Anyone interested to be part of Handbook Committee can reach out to David Furrer or Amy Nolan.

Current State of Author Invitation:

Approx 25 authors have already been invited through Scholar One. Total number of expected authors >100. Some of the authors are expected to contribute to sections of a larger article.

If anyone has any ideas for authors or would like to help please contact Dave Furrer via email david.furrer@prattwhitney.com. Amy Nolan is handling ScholarOne and follow up questions: amy.nolan@asminternational.org.

* 1. Newsletter (co-Chairs: Beth Snipes, Beth.Snipes@tec-materialstesting.com , Ben Wang, wang.ben@cummins.com)

Newsletter to be published by November. Draft newsletter is ready and Ben is working on finalizing the newsletter. Participation from membership (new activities, honors) is appreciated. Any comments on making the newsletter more attractive for the membership are welcome. Please contact Beth Snipes or Ben Wang.

Please provide input for the newsletter to Beth and/or Ben. Looking for student participation.

Need membership feedback/input: Is the size/content/length suitable? Looking for other trivia ideas. Beth S. suggested shape memory alloys might have RS? Members and Students please feel free to contribute articles – still need a name for this section. Always feel free to contribute “members in the news” ideas for those who have received awards – don’t be shy to announce - let us know what you are doing!

Link to current newsletter on ASM RSTC website:
https://www.asminternational.org/wp-content/uploads/residual-stress-technical-committee/ASM%20RSTC\_Got\_Stress\_2023-1.pdf

* 1. Education and Chapter Outreach (Jeff Bunn, Chair, bunnjr@ornl.gov)

Members: Bunn, Hill, Ben Salah, Snipes, Sicotte, Styger, Furrer, Belassel

Feel free to reach out to Jeff if you want to get involved in this Sub-Committee. Start thinking about Aeromat 2024.

The IMAT/HT workshop was cancelled due to lack of participation. The sub-committee had a meeting to brainstorm how to increase the number of participant for the workshops. Recommendation was to try to host the workshop during the conference rather than the Sunday before the conference. Session would include experts giving talk regarding the measurement techniques /modelling methods during the conference. To be discussed at the monthly meeting of the AEROMAT organizing committee.

Waiting for communication from AEROMAT 2024 organizing committee on the proposal to hold the workshop as part of the conference program during the week.

If the format works with AEROMAT will be implemented at IMAT 2024 as well. Another idea was to hold the workshop in its current format but during the conference and to include the workshop as part of the conference registration fee.

1.5. Professional Meetings, Conferences, Symposia (Rajan Bhambroo, Chair rajan.bhambroo.18@gmail.com,Toshi Suzuki, Vice Chair, toshi-suzuki@pulstec.co.jp)

Subcommittee meeting scheduled for 12 September 2023. If you are interested, please email Rajan. (rajan.bhambroo.18@gmail.com)

“Special Residual Stress” issue of the Journal of Materials Engineering and Performance (JMEP) moving forward. Peer review under way. 2 papers accepted so far. Formal publication ~January 2024. Direct contacts are Lesley (lesley.frame@uconn.edu) and Rajan (rajan.bhambroo.18@gmail.com). Will also reach out to relevant past authors. Please let Andrew Payzant know if you have some time to review it would be greatly appreciated. What is status? Iuliana Cernatescu has accepted 2 papers for review and Al Conle accepted one – thanks for the assistance! – add Seung-Yub Lee

For Residual stress programming at IMAT, we need to be involved at the programming committee level. This was discussed during the Technical committees summit held during IMAT 2023. It was suggested that as a technical committee it would be good to have a representative on the programming committee who can coordinate the conference related activities for the Residual stress sessions. Need to identify someone to be contact point from RSTC. Will need a brief description of the sessions that might be added to call of papers. Residual Stress to be included as a feature topic. Rajan B. to act as contact point. Need more volunteers to make residual stress sessions a regular part of the IMAT programming.

List of Upcoming Conferences and Key Dates:

SAE FD&E Committee held their Fall meeting virtually on 24 Oct. Fuch’s award has been decided – yet to be announced. Contact: galescaseye@johndeere.com. New chair of FD&E committee is Dr. Peter Huffman (HPK) peter.huffman@hbkworld.com . Update: Update was given to the committee of residual stress relaxation work. In the process of paper for that project. Next meeting to be in-person and looking for facilities to host this meeting. Casey volunteered for a talk on the stress-relaxation work.

The Brazilian Gear Conference (BCG 2023) was held October 18th and 19th, 2023 in São José dos Campos – SP/Brazil. Link: <https://www.bgc23.ita.br/en/inicio-english/>

8THICLPRP – International Conference on Laser Peening and Related Phenomena held at Hwabaek International Convention Center (HICO), Gyeongju, South Korea from October 22-27, 2023. Link: <https://www.iclprp2023.org>

INCASE 2023 - 3rd International Conference on Advanced Surface Enhancement - Singapore 26-28 September 2023. <https://www.incase2023.org/>

British Society for Strain Measurement Workshop, was held at National Physical Laboratory, Teddington, UK, September 27,2023. <https://www.bssm.org/events/workshops-seminars/the-measurement-of-residual-stress-using-laboratory-based-x-ray-diffraction-instruments-the-positives-the-pitfalls-and-a-round-robin/>.

John Bouchard attended the workshop. Successful overall. Round robin for shot peening samples to look at different geometries and texture dependence discussed. Round robin should be open to all the labs. More details in next meeting.

Heat Treat 2023 (co-located with IMAT 2023 – will have cross listed sessions) was held October 16-19 2023 in Detroit. Lesley F. has the info on RS related topics. Papers could also be invited to the JMEP Heat Treat special issue. Panel session was held with Dave F. chairing the session –The purpose of the session was to provide awareness of RSTC, discuss real issues, etc. Link: <https://www.asminternational.org/web/heat-treat> Scott H. to provide Rajan B. with contact info.

13th International Fatigue Congress, Nov 6-10, 2023 in Hiroshima, Japanhttps://fatigue2022.org/committees.html

PRICM11 – November 19-23, 2023 – Jeju, South Korea. Website: [www.pricm11.org](http://www.pricm11.org) . Zhenzhen Yu will be attending the conference and will provide update during the December meeting.

21st International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics (43rd National Symposium on Fatigue and Fracture Mechanics) will be held November 8-10, 2023 at the Washington Hilton, Washington, DC. <https://na.eventscloud.com/website/44342/21st-international-astm-esis-symp/>. Mark James indicated there may not be any RS related sessions??? TBD. Mark will look into it – program not online yet No separate session but papers may be in other sessions like in Life Prediction.

Fatigue Design, Senlis (Paris), France, Nov 29-30, 2023. Link: <https://www.fatiguedesign.org/>

ECRS-11, Prague, ECRS11, May 20-24, 2024 - Call for papers? Tutorial/ Workshop being currently planned. Anyone interested please reach out to Nikolaj Zangenberg. At ECRS (Prague, May 20-24 2024), a tutorial/workshop on "Quantification and uncertainties in residual stress measurement" workshop is being planned. Nikolaj will provide more information as things progress and may reach out to members for help. [https://www.xray.cz/ecrs11/workshops.htm)](https://www.xray.cz/ecrs11/workshops.htm%29)

SEM Annual Meeting June 3-6 2024 in Vacouver Washington. <http://sem.org/annual> . Abstracts were due October 2nd, 2023. This group has Residual stress committee and we should collaborate where possible.

Aeromat 2024, 12-14 March, Charlotte, NC. Acceptance of abstracts is closed; however, if you would like to present, please let Jason Sheuring or Nihad Ben Salah know. Link: <https://www.asminternational.org/aeromat-2024/>

ICRS 2025– Contact Andrew Payzant payzanta@ornl.gov or Mike Prime prime@lanl.gov ASM to link up with ICRS – to be held in Detroit and will co-locate with IMAT in Detroit from October 20-24, 2025.

ICSP will be held at Purdue University in 2025 dates TBD.

* 1. University Outreach Subcommittee (Joe Rasche, ad hoc Chair joe.rasche@ansys.com)

Joe still working on formalizing site. Dave F. and Joe R. worked on interfacing with Ansys’ Director Global Academic Programs. Ansys has volunteered to manage a hosting site that we can post to via the ASM site (i.e. no need for ASM to support) to connect Academia and Industry thus enabling a global reach. Looking for projects – is there anything you need looked at/analyzed? Need real problem statements from Organizations/Individuals that are very focused and well defined, then match Students and Faculty with projects. Contact Dave F. (david.furrer@prattwhitney.com) or Joe R. (joe.rasche@ansys.com) with ideas or topics.

If you know any students who want to participate in RSTC activities, please reach out to Beth Snipes.

* 1. **Technical Collaboration Sub-committee** [Chair: Mike Hill]

Mike Hill would like some help with this committee. Anyone interested please reach out to Mike Hill.

ASTM E28.13 – Gary Schajer (Beth S., James P.)

ASTM E08 – Fatigue and Fracture – Mark James has been authorized to be liaison with Executive Committee bring items of potential interest to RSTC.

ASME Pressure Vessel and Piping Division (PVP) oversees the PVP Code. Residual stress issues, notably welding and fracture mechanics (crack growth and fracture), are frequently discussed in the Materials and Fabrication committee (PVP M&F). Mike Hill has links to M&F and can provide introductions to interested RSTC members. New members are added to M&F each July at the annual PVP Conference - John Cline is interested in being in the loop especially pipeline/pressure vessel related activity – also offered that numerous case studies could be made available – TBD.

SAE FD&E – Casey Gales and Peter Huffman. Casey to liaison and invite Peter to RSTC activities.

SEM – Mike Hill to reach out.

**AWS (American Welding Society):** Need to reach out. AWS has a significant interest in the residual stress and we should reach out to AWS members to collaborate with AWS on the residual stress aspect.

Note: This sub-committee will be a collaborative effort and we would like to encourage members who are active in other technical organizations to be actively involved in the sub-committee activities.

New business:

A technical committee summit was held at IMAT. The RSTC is one of the most active committees, and an example of how a successful technical committee is structured.

IMAT summary – Panel discussion was held as part of the residual stress session. We had 4 technical talks on residual stress followed by the panel session. David Furrer moderated the session with Dr. Iuliana Cernatescu (Pratt & Whitney), Dr. Nihad Ben Salah and Dr. Charlie Li (Dante Solutions) as the panelists. Very good discussions on the need for residual stress and how this can be incorporated into design.

ASM Awards – We are able to submit nominations to ASM. We should be active in recognizing our RSTC members for these awards. Any volunteers to head up this activity?

* 1. ASM Fellow Award Nomination Deadline November 30,2023
	2. Nominating Committee: December 15, 2023.
	3. All Other Awards: Deadlines vary between Feb 15th and March 1st. Awards are as follows:
		1. Gold Medal
		2. Silver Medal
		3. Bronze Medal
		4. Allan Putnam Service Award
		5. Honorary Membership
		6. Distinguished Life Membership

Please let Beth Snipes/Scott Henry know if anyone is interested in being nominated for the awards or you know anyone you want to be nominated for these awards. Please find the various awards and the eligibility criteria at

<https://www.asminternational.org/wp-content/uploads/2023/01/ASM-Awards.pdf>

NOTE: Next meeting will be held on 15 November 2023.

**Relevant Links and Materials:**

**New members:** Please fill in roster information form <https://forms.gle/3YwCTEWGz9NtG5nHA>

**New web page:** Please feel free to share web page link for ASM-RSTC <https://www.asminternational.org/residual-stress-technical-committee>

**Advertising:** Please consider advertising the ASM-RSTC when presenting at professional meetings – Link to PowerPoint: <https://rb.gy/ojigo> Link to PDF: <https://rb.gy/v2l4s>

**LinkedIn shout-out:** Members please share/forward to improve visibility. <https://www.linkedin.com/posts/asm-international_the-asm-residual-stress-technical-committee-activity-6970438123017101312-97rt?utm_source=share&utm_medium=member_desktop>

**Student intro/outreach letter:** Please contact Beth Snipes beth.snipes@tec-materialstesting.com

**Newsletter ideas:** Please feel free to send newsletter ideas to Ben Wang wang.ben@cummins.com: always looking for contributions, i.e. Members in the News, Did you know? Trivia items, any fun reading ideas welcome, ideas for new features. The newsletters past and current can also be found on the ASDM-RSTC webpage: <https://www.asminternational.org/residual-stress-technical-committee>

**Outreach Poster:** Please contact Scott Henry if you have ideas for Mat. Sci. organizations you think might benefit from it scott.henry@asminternational.org