ASM International

**Residual Stress Technical Committee (ASM-RSTC) - Sept. 1, 2022 – Aug. 31, 2023**

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

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

**Seung-Yub Lee - Secretary,** **seungyub.lee@prattwhitney.com**

**Mike Hill – Past Chair,** **mrhill@ucdavis.edu**

**Notes for ASM-RSTC Meeting 16 August, 2023**

Attendees: (total 31) James Pineault, Scott Henry, Amy Nolan, Al Conle, Beth Snipes, Chase Everett, Dave Breuer. Dave Dobbins, David Furrer, Dave Upshaw, Eckehard Muller, Eric Burba, Gabe Grodzicki, Gary Styger, Greg Newton, Jason Scheuring, JP Thomas, Lynn Ferguson, Mark James, Mark Newby, Mohammed Belassel, Nicholas Bachus, Nihad Ben Salah, Nikolaj Zangenberg, Rajan Bhambroo, Ronnie Rego, Seung-Yub Lee, Thomas Lachtrupp, Tony Yao, Toshi Suzuki, Zhenzhen Yu.

New members: Greg Newton – Newton Heat Treating, aluminum heat treat – uses XRD to test process- uphill quenching – has a Strainflex – looking for replacement equipment.

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 James Pineault (xrdlab@protoxrd.com)
5. Ballot results are in! A total of 31 ballots were submitted – thank you all for your participation! The new ASM-RSTC leadership team for the 1 September 2023 – 31 August 2024 will be:

Chair: Beth Snipes

Vice Chair: Seung-Yub Lee

Secretary: Rajan Bhambroo

Past Chair: James Pineault

1. A feedback form/survey will be distributed to the membership to solicit feedback – this will be coming shortly.
2. Michael Gorelik let us know that the ICAF (International Committee on Aeronautical Fatigue and Structural Integrity) has a sizeable conference every two years.  At the most recent one, Michael was nominated a National Delegate - **Congratulations Michael!!!**FYI - Here is a link to the latest ICAF conference:  [**https://www.icaf2023.nl/**](https://www.icaf2023.nl/)As a National Delegate, Michael will be producing a national report (roughly speaking a "state of the union" type) for the 2021-2023 period which will highlight fatigue, fracture, and damage tolerance related activities in the Aerospace community.  He is looking for a 1 to 2 page summary of this committee’s activities related to structural integrity. Basically, he would like an extended abstract/summary from the ASM RSTC Membership which would be included in the National Report.

Some great input has been received from several people which has been forwarded to Michael already – if possible please provide any pertinent info that you would like Michael to share in his report asap. Even a sentence or two in a brief/informal/point-form email with your input would be great! Email input to: xrdlab@protoxrd.com

**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 will present to RSTC – TBD.

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.

CEN Technical Committee 138 (NDT) – Have opened the Working Group 10. 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 NZ.

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.

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)

Thanks the committee for work and rotation of leadership. Status: moving forward – many more sections have authors assigned – still need to push assigning remaining authors since writing, review etc. needs to be done, then published. Discussions around ToC ongoing. Expects this handbook will be unique and used across a wide variety of disciplines. Mission #1 is to complete identifying authors for each article in the TOC. Amy N. indicated this will likely be a 2 volume set which is unusual. Ronnie asked if there are still opportunities to add/modify topics missing – Dave F. indicated this should be possible. Nihad B. asking the RSTC for assistance for Division 4 – please contact Nihad if you can help. Zhenzhen Yu indicates she can assist – needs Nihad’s email. 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)

Still working on newsletter – will work on soon – all elements are in place, just needs to be pulled together. 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? Dave F. indicated SCC might be interesting? Dale B. to please submit some verbiage to announce release of the new SAE Aerospace Spec. – to be published in the newsletter. 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 is live and so far we have one student signed up. Kathy said the majority of people sign up 3-4 weeks before the meeting. Please ask members to publicize the workshop. If we have to cancel then we should work to advertise the workshop or feel out the needs of the community coming to the Residual stress session at IMAT to see if this workshop if needed or if we are overreaching.

IMAT workshop scheduled for Sunday 15 October 2023 from 1pm to 5 pm. Jeff to look into registrations and provide updates to RSTC. Please let Jeff know if you have any ideas on how to publicize. Other workshops will be running as well. https://www.asminternational.org/imat-2023/wp-content/uploads/sites/43/2023/03/Residual-Stress-Course.pdf

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 may have some time to review it would be greatly appreciated – Iuliana Cernatescu has accepted 2 paper for review and Al Conle accepted one – thanks for the assistance! – add Seung-Yub Lee

List of Upcoming Conferences and Key Dates:

DXC 2023 – Chicago, Aug 7-11 was held last week. Debrief: Rajan B. indicated a texture workshop was well received – conducted by high level instructors. Sessions on RS and texture were well attended. No conference proceedings but might be some publication? TBD

SAE FD&E Committee looking to have a meeting in the fall of 2023 dates TBD. Fall meeting will be just presentations, no paper required – looking for RS and general fatigue materials. Fuch’s award has been decided – yet to be announced. Contact: galescaseye@johndeere.com

FABTECH Chicago and American Weld Society (AWS) Professional Program Symposium are two combined events to be held in Chicago from September 11-14 2023. Links: <https://www.fabtechexpo.com> <http://www.programmaster.org/PM/PM.nsf/UpcomingSymposia/B8D7525D44BAA15E8525891000523992?OpenDocument&ParentUNID=26F6471BF89F8A218525890F006B0197>

The Brazilian Gear Conference (BCG 2023) to be 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. Call for abstracts still open? – location is nice, feel free to submit soft close on abstract submission May 1 2023 – covers RS, modeling, surface treatment, properties etc. Large aero OEM presence. Link: <https://www.iclprp2023.org>

INCASE 2023 - 3rd International Conference on Advanced Surface Enhancement - Singapore 26-28 September 2023. Feb 15th 2023 Abstract deadline. <https://www.incase2023.org/>

British Society for Strain Measurement Workshop, will be 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/

Heat Treat 2023 (co-located with IMAT 2023 – will have cross listed sessions) will be held October 16-19 2023 in Detroit. Lesley F. should have the info on RS related topics. Papers could also be invited to the JMEP Heat Treat special issue. Panel session would involve inviting panel members – Dave F. has volunteered to Chair the session – could take up the equivalent of 2 paper sessions i.e. ~1 hour to 1.5 hours long – session to provide awareness of RSTC, discuss real issues, etc. Need to set a time slot that does not conflict with RS sessions. 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

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

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?

Aeromat 2024, 12-14 March, Charlotte, NC. Acceptance of abstracts now open – deadline 30 September 2023. Link: <https://www.asminternational.org/aeromat-2024/>

ICRS proposal for USA meeting in 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.

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.

* 1. Articulation with Other Professional Groups (Current to be a joint effort).

This could be a new subcommittee? If anyone wants to head this subcommittee please let James P. know – Beth S. nominated Mike H. to lead

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.

SEM – Mike Hill to reach out.

New business: Dave F. indicated an ad-hoc meeting might be convenient at IMAT/HT meeting. Scott H. indicated last year a technical committee summit was held on the Sunday prior – Scott H. will send out invitations – Dave F. will announce informal side meeting shout-out to RSTC.

Technical topic: None

NOTE: Next meeting will be held on 20 September 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

**ASM call for Associate editors for JMEP**: To learn more see journal link: <https://www.springer.com/journal/11665>. For more information, please contact ASM’s Journals Administrator, Cristina Formichelli at Cristina.Formichelli@asminternational.org