



Thursday, September 3, 2020

Monthly Meeting

5:00PM - 6:00PM Workshop

6:00PM - 6:30PM STS Announcements

6:30PM - 7:30PM Presentation/Speaker

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## September Meeting

Speaker: Vivek Gupta and Gopal Salvady



**Title:** Improving Performance of Chemical Manufacturing Processes using Data Analytics

**Abstract:** There is a significant opportunity to unlock value in the chemical manufacturing processes using advanced analytics. The plant processes have significant variability from ideal conditions during operations. This variability is captured in significant data assets in the plants which are amenable to analytics using BIG DATA, AI, and other approaches. A combination of data scientists, chemical engineers, IT teams, and plant operations can help to identify and create analytical models that can help to improve yield, quality, throughput, and reduce cost. There are many examples both observed in our own works and in public reports an output improvement to the order of 10%, significant cost savings, and large profitability improvements. Our goal of today's presentation is to provide examples of these success stories, a mini-view of the process steps required, and to help chemical engineers to relate to these tools better.

## September Monthly Meeting

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### Speaker Bios:

Vivek Gupta is the Founder of SoftSensor.AI focused on providing analytics-driven improvement solutions. Vivek has 22+ years of experience in data science and analytics where he worked with EY as a partner, Co-Founder, and Chief Scientist for a boutique consulting firm and corporations like HSBC in helping clients to improve performance using data & analytics.

Gopal Salvady is a Mechanical/Aeronautical engineer and has worked in Aerospace, Defense, Automotive and Petrochemical industry solving engineering problems over a span of 30 years. He has two Masters degrees, one in Mechanical engineering and another in Aeronautical engineering. Currently he owns a small business “Enedsys” and he is focused on solving problems in the engineering, manufacturing and education industries.

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## September Workshop

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### Speaker: Babak Rafienia

**Topic:** Developing a Proper Design Philosophy for Gas/Liquid Separators (Do's and Don'ts if you want your separator to perform)

**Bio:** Babak Rafienia is a Chemical Engineer with Master of Science degree specialized in separation and distillation technologies. He has been with AMACS Process Tower Internals for the past 6 years and his focus is currently on product and technology development, training junior engineers, troubleshooting, re-vamping, and retrofitting separation, and distillation projects globally. Babak is also Excom. and board member of AIChE Management Division (MGMT) and Continuing Education Chair of AIChE South Texas Section (STS). He has chaired multiple session in AIChE conferences, authored technical articles, and has served as judge and award committee member of technical presentations in his field of expertise.



**Abstract:** Have you heard the terms Gas/Liquid Separator or Liquid/Liquid Separator before? What are these and what are their functions in a gas plant, refinery, or any other part of energy and oil and gas industry? We will answer these questions, but more importantly we need to know how to design and utilize one. Separators, often called “Knockout Pots”, are necessary part of many processes to ensure products are meeting specifications required, environmental requirement are met on produced streams, and operational units and equipment like compressors are working as expected to keep the plant running. So, the main question is: **What is the proper design philosophy to design and operate a separator vessel in our plant?**

There are various chemical and physical separation processes that are used in oil and gas industry to separate products like gas, oil, water from each other. The most common method is using physical separation techniques by utilizing separator drums equipped with separation devices like inlet diffusers, mist eliminators devices (gas-liquid separation), or coalescers (liquid-liquid separation). These are all working based on the physical properties of gas and liquid phases, streams, and products.

To achieve high-efficiency gas/liquid separation, one must analyze the entire vessel from inlet piping to outlet nozzle. Most designers only focus on the internal equipment like mist eliminator and overlook the other sections of the column. This presentation attempts to describe the basics of some of these separation technologies and develop a proper separator design philosophy using lessons learned from different case studies

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## Meeting Registration Information

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The September meeting times are:

5:00PM - 6:00PM Workshop

6:00PM - 6:30PM STS Announcements

6:30PM - 7:30PM Presentation/Speaker

The entire program will be held via Zoom. Registration and Zoom link information can be found on the website at:

<https://www.aiche.org/community/sites/local-sections/sts/events/september-2020-virtual-monthly-meeting>

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## September 2020 STS-AIChE Chair's Letter – Mark Harkness

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Hello South Texas Section,

I hope your summer has gone well so far.

As we continue to work around Covid restrictions and guidelines, we will continue to hold our Monthly meetings and events virtually.

Our September Monthly Meeting and Workshop will be held on September 3, 2020. Please visit the South Texas Section website to register.

<https://www.aiche.org/community/sites/local-sections/sts/events/september-2020-virtual-monthly-meeting>



The 12<sup>th</sup> Annual Southwest Process Technology Conference will be held virtually on October 1-2, 2020. Many thanks to Alan Rossiter, Ian Glasgow, and the AIChE headquarters staff for recomposing this to an online program.

You can register for the SPTC at <https://www.aiche.org/conferences/southwest-process-technology-conference/2020>

A Climate Solutions Symposium was held this Saturday past. Thanks to Tom Rehm for all the time and effort into making this a great event,

South Texas Section member Babak Rafienia is a winner of AIChE's 35 Under 35 Award for 2020. Please join the South Texas Section in congratulating Babak for this recognition.

If you did not hear the news, Meghan Spivek, the STS Communications Officer, accepted a new position over the summer and moved to Boston. We wish the best for Meghan in her new role and new city.

On to Elections...

Election for 2021 Chair-Elect (2022 Chair) is underway. [Julie D. White](#) and Babak Rafienia are the two candidates for this position. They will each be speaking briefly at the Monthly meeting.

The ballot can be found at: <https://www.aiche.org/community/sites/local-sections/sts/announcements/2022-chair-election-ends-september-3-2020>

Also, elections for Treasurer, Education Officer, Communications Officer will be taking place soon. Details on candidates ad timing will be published as soon as it is available.

I hope you can all attend the online Monthly meeting. In the meantime, please be safe.

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## Upcoming Events

### The Southwest Process Technology Conference October 1-2, 2020

#### SPTC Goes Virtual!

Now in its 12<sup>th</sup> year, the [AIChE Southwest Process Technology Conference and Exhibition](#) has become a highlight of the STS calendar. As a regional event, SPTC provides a high quality technical program at a reasonable price, and in a very manageable, friendly environment. SPTC is organized jointly by STS and AIChE.

This year, for the first time, SPTC will be a virtual event. This has required a great deal of reorganizing. However, the dates remain as previously advertised: Thursday-Friday, October 1-2, 2020.

We are pleased to announce that our keynote speakers will be Scott Nyquist, Senior Advisor, McKinsey & Company, and Autumn Hong, Sr. Solutions Leader & Associate Partner in Energy Insights, McKinsey & Company. They will be speaking on *The Future of Petrochemicals*. – including the impact of COVID-19.



The conference includes eight technical sessions, plus engineering ethics:

Energy Efficiency

Catalysis & Reaction Engineering

Process Safety

Distillation & Separation

Engineering Ethics

Petroleum Refining Technology

IIoT/Big Data

Chemical Process Technology

Sustainable Technology

PDH certificates will be available for all sessions. Opportunities are still available for [sponsors and exhibitors](#), and conference [registration](#) is now open. The Early Registration Deadline is August 27.

With thanks to our sponsors:



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## Upcoming Events

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### Thursday, October 1, 2020 - Monthly Meeting

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The October Monthly meeting will be held virtually in conjunction with the Southwest Process Technology Conference, Meeting and speaker details will be published when available

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### Networking Meetings

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The in-person Networking Meetings have been cancelled until further notice. There may be opportunities for online sessions at some point. Information will be published when or if it becomes available.

Have suggestions, ideas, comments or want to recommend a speaker for future FFNL events? Contact William Pittman at [WilliamPittman@micropackamericas.com](mailto:WilliamPittman@micropackamericas.com).

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### 2021 STS—UH PE Review Course

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The review course is presently planned to be offered in Spring of 2021. Information will be published as it becomes available.

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### Volunteer Opportunities

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A volunteer opportunity is available for anyone who may have interest in helping the Section in the following capacity. Please contact Mark Harkness at [mark.s.harkness@gmail.com](mailto:mark.s.harkness@gmail.com) if you are interested.

- Webmaster  
Maintains the website, e-communication and e-registration pages under the direction of the Communications Officer.
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### 2021 STS Opportunities

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#### 2021 STS Speaking and Exhibit Opportunities

We hope that at some point in 2021 face-to-face meetings will again become the norm. We look forward to hosting the Monthly Dinner meeting, Energy and Water Forums, and Networking meetings. If you or one of your colleagues are interested in these events, please contact Mark Harkness at [mark.s.harkness@mail.com](mailto:mark.s.harkness@mail.com) with contact information so that we can readily reach out when our more normal schedule is possible.

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## STS Officer Elections

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Dear STS-AIChE community,

The election process for 2021 Chair-Elect (2022 Chair) has begun!

We are happy to have two excellent candidates. Voting is on-going until September 3, 2020, The ballot and candidate information can be accessed at our website:

<https://www.aiche.org/community/sites/local-sections/sts/announcements/2022-chair-election-ends-september-3-2020>

The Candidates for Chair-Elect are:

Julie D. White, PE, CFSP

While I have traveled for work to five of seven continents, I am privileged to call Houston my hometown. I am Julie D. White, PE, CFSP, who attended my first STS meeting in high school and have enjoyed supporting STS since 1993. I am an Advisor in Strategic Process Safety for Chevron, providing planning, leadership, and execution support for Operational Excellence/HSE audits. My industry experience includes a diversity of operations, process, and process safety engineering in the petrochemical, polyolefins, offshore, and federal sectors. Leadership includes stewarding multi-regional cross-discipline teams, managing technical safety teams, developing industry and remote best practices, and inspiring professional societies for growth. I obtained my B.S. and M.S. degrees in Chemical Engineering from Colorado School of Mines (1993) and Louisiana State University (1999).



Babak Rafienia

I am Babak Rafienia, a ChemE by degree and by heart; and passionate about problem solving, teaching, sharing knowledge, and my family. I usually get excited talking about these topics, especially if I can somehow connect them to Chemical Engineering. I moved to Houston, TX in 2014 and live here with my wife and son since then. I hold B.Sc. and M.Sc. degree in Chemical Engineering and had various research, technical and commercial roles in in the oil & gas market which has led to leading several research and development projects, publications, a patent, and becoming specialized in separation technologies. Currently I am a Senior Sales Engineer at AMACS Process Tower Internals and specialized in separation and mass transfer technologies to design and troubleshoot separators and distillation towers in oil & gas industry, globally. I have led various projects for the past 8 years and I have volunteered and been involved in many AIChE activities trying to contribute to and positively impact this community. As a result, I have been able to collaborate leaders in different sectors of Chemical Engineering industry and play a role in shaping the national AIChE community and AIChE South Texas Section. Recently, I was honored to be selected as the recipient of national AIChE's prestigious 35Under35 Award in Leadership for 2020.



## STS Officer Elections – Continued

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We also want to invite current and future members to participate in other upcoming leadership opportunities within STS-AIChE. There are four positions available for 2021 and many more roles within the chapter for those of you interested in playing a more active part in the STS chapter, while, at the same time, learning, networking, and developing those soft skills needed in our community. Details about these elections will be provided soon. The election process for these positions will be announced soon.

### Positions Available:

- Treasurer:

Two year term starting Jan 1 of odd numbered year through Dec 31st of even numbered year, or until a successor is elected and takes office.

The treasurer handles the local section finances and accounting for all local section money received and spent, including membership dues, reimbursements from AIChE, and program revenues and expenses. This involves keeping accurate records, and reporting the local section's financial status according to the manner and schedule prescribed in the bylaws. The local section officers should clearly establish guidelines and procedures for authorizing expenditures, paying bills, signing checks, and any other financial related actions, with the treasurer responsible for keeping copies and records of all transactions. The treasurer reports on all requests to the Executive Committee or other officers, including status of bank balances, dues collections, expenses relating to specific projects, and any abnormal account activity. The treasurer is also responsible for preparing an annual budget in the beginning of the term, and should prepare an annual report on the local section's fiscal condition at the years-end, and submit to AIChE with the annual report.

- Education Officer:

Two year term starting Jan 1 of odd numbered year through Dec 31st of even numbered year

Plans and implements activities to provide members with professional development opportunities and employment (job seeking) assistance, networking and relationship building opportunities between employers/industry and employees, information on local employment data, trends and statistics, general career guidance services. This person/committee may also be responsible for planning E-Week activities and outreach.

- Communications Officer

Two year term starting Jan 1 of odd numbered year through Dec 31st of even numbered year. ≤ 35 years of age at start of term.

Administers and manages the operations behind the local sections newsletter, publication, website, and e-communications. Coordinates efforts with respect to Government Relations and Public Relations.

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## STS Officer Elections – Continued

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If you feel you want to participate actively by being an officer, or if you know someone who you feel is interested in these roles, please contact Tom Rehm at [tom@tomrehm.com](mailto:tom@tomrehm.com) by September 5, 2020.

We will need a brief bio, current objectives for your role within the chapter, and a recent picture. You can nominate your name for multiple roles, but only one will be selected before the voting begins. You can prepare a brief election campaign pitch to be given during our October monthly meeting. The elections will take place between mid-October and mid-November.

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**STS-AIChE 2020 Season Pass****2020 STS-AIChE Patrons**

<b>First Name</b>	<b>Last Name</b>	<b>Company Name</b>
Yurika	Diaz Bialowas	Chemstations, Inc.
Travis	Fixmer	LyondellBasell
Jordan	Pearce	PSE
William Paul	Waits	
Jack	Chosnek	KnowledgeOne LLC
Dale	Embry	ConocoPhillips
Mark	Harkness	Harkness Engineering & Consulting
George	Vourazeris	Airgas Merchant Gases
Matthew	Kolodney	
Victor	Edwards	Vic Edwards Associates
Jim	Brigman	Ingenero, Inc.
Tom	Rehm	The Climate Solutions Community
Thomas E.	Menn	
Carol	Schmidt	Wood Group
Joseph	Ramey	Westchase Design
John	Middleton	WorleyParsons
Ravindra	Saxena	ANR Consulting
Trevor	Rice	Chemstations, Inc.

## South Texas Section Corporate Liaison Program

The intent of the program is to have a liaison contact at companies in the region that employ a large group of Chemical Engineers, so that the liaison can pass on information on upcoming events, and encourage attendance at STS-AIChE Events.

This program will make it easier for Chemical Engineers to learn about meetings and events that may interest them, and by providing a “personal touch” and intra-company networking opportunity, overcome potential fears or objections to participating. The program will also provide a potential opportunity for employees to be recognized as leaders within their company.

Responsibilities and benefits are listed in the table below.

STS-AIChE	Liaison	Company
<b>Responsibilities</b>		
<ul style="list-style-type: none"> <li>✦ Provide meetings and events</li> <li>✦ Maintain list of liaisons</li> <li>✦ Send out special emails to liaisons</li> <li>✦ Advertise program and recognize liaisons and companies</li> </ul>	<ul style="list-style-type: none"> <li>✦ Forward STS-prepared emails to department/group</li> <li>✦ Create meeting invitations for coworkers</li> <li>✦ Try to set up carpools where able</li> <li>✦ Attend meetings where possible</li> <li>✦ Interface with Company Management on STS activities and sponsorship opportunities (as applicable)</li> <li>✦ Provide feedback to STS Officers on company interests and comments</li> </ul>	<ul style="list-style-type: none"> <li>✦ Support the liaison</li> <li>✦ Advertise where applicable</li> </ul>
<b>Benefits</b>		
<ul style="list-style-type: none"> <li>✦ Higher attendance</li> <li>✦ Better corporate relations</li> </ul>	<ul style="list-style-type: none"> <li>✦ Personalized Nametag for meetings</li> <li>✦ Demonstrated leadership within company</li> <li>✦ Increased networking ability within corporation</li> <li>✦ PDH credits/technical education</li> </ul>	<ul style="list-style-type: none"> <li>✦ Recognition at meetings</li> <li>✦ PDHs / education for employees</li> <li>✦ Networking/team building opportunities</li> </ul>

In early 2016, Travis Fixmer, a Process Optimization and Design Engineer with Huntsman Performance Products, developed an intranet website which promotes our Section and its activities within Huntsman. He offered to be a resource to individuals who would like to do the same. If you would like to promote our Section, Travis can provide you with guidance on how to proceed.

Others in our section send intra-company emails promoting the South Texas Section. This can be easily done by simply forwarding the STS monthly meeting notice email to employees in your company.

There is no cost for liaisons or companies to participate. Participation as a liaison is completely voluntary, and companies can transition to a new liaison or end their participation at any time.

If you have any questions, please contact Mark Harkness at [mark.s.harkness@gmail.com](mailto:mark.s.harkness@gmail.com) or 713-819-6981.



## South Texas Section AICHE

STS-AICHE Primary Business Address  
Address Line 2  
Address Line 3

*2020 Officers and Contact Information*

### Officers

**Chair** Mark S. Harkness  
[sts-chair@aiiche.org](mailto:sts-chair@aiiche.org)

**Chair Elect** Dr. Ramanan Krishnamoorti, Ph.D.  
[sts-chairelect@aiiche.org](mailto:sts-chairelect@aiiche.org)

**Past Chair** Dr. Tom Rehm, Ph.D.  
[sts-pastchair@aiiche.org](mailto:sts-pastchair@aiiche.org)

**Secretary** Joseph Hernandez  
[sts-secretary@aiiche.org](mailto:sts-secretary@aiiche.org)

**Treasurer** Yurika Díaz Bialowas  
[sts-treasurer@aiiche.org](mailto:sts-treasurer@aiiche.org)

### Executive Committee

**Position 1: Education**  
Babak Rafienia  
[sts-position1@aiiche.org](mailto:sts-position1@aiiche.org)

**Position 2: Outreach**  
Dr. Nabila Shamim, Ph.D.  
[sts-position2@aiiche.org](mailto:sts-position2@aiiche.org)

**Position 3: Communications**  
VACANT  
[sts-position3@aiiche.org](mailto:sts-position3@aiiche.org)

**Position 4: Human Resources**  
Dr. William Pittman, Ph.D.  
[sts-position4@aiiche.org](mailto:sts-position4@aiiche.org)

### Volunteers

**Arrangements:** [John Middleton](#)  
**Awards:** [Tom Menn](#)  
**Membership:** [David Silarski](#)  
**Webmaster:** [Talia Sanchez](#)  
**Young Professionals:** [Lucas Von Ruff](#)

### SOUTH TEXAS SECTION MISSION STATEMENT

As a section of AICHE, we serve chemical engineering professionals in the South Texas region through education, professional development, and networking.

### Vision 2018

We will become an organization with strong and active membership. We will accomplish this through:

1. Increasing awareness
2. Improving relevancy of our programs
3. Improving our governance
4. Hospitality/Welcome/Social

#### — SUBSCRIBE/UNSUBSCRIBE INFORMATION —

Our newsletter subscription list is by invitation only.

**Subscribe:** Click on the following link: [Subscribe](#).

**Unsubscribe:** Click on the following link: [Unsubscribe](#). Your email address will be removed from the subscriber list.

#### — MAINTAIN YOUR CONTACT INFORMATION WITH STS —

Maintain your contact information with the South Texas Section using the online community: <http://www.aiiche.org/>

Contact the AICHE for PERMANENT ADDRESS CORRECTIONS:



<http://www.aiiche.org/contact/form>



1-800-AICHEM (1-800-242-4363)



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New York, NY 10005-4020

AICHE Customer Service Center  
100 Mill Plain Rd 3rd Fl  
Danbury, CT 06811

## The South Texan Newsletter Crew

WHAT DO YOU THINK OF THE NEWSLETTER? We want to know!

Contact us at [sts-newsletter@aiiche.org](mailto:sts-newsletter@aiiche.org) with comments, questions, suggestions, and ideas for next month.

### Newsletter Editor

**Position 3 Chair**  
[sts-position3@aiiche.org](mailto:sts-position3@aiiche.org)

### Submit an article! Contact:

**Matt Kolodney**  
713-471-8956  
[MKolodney1@comcast.net](mailto:MKolodney1@comcast.net)

### Reserve your ad space! Contact:

**Yurika Diaz Bialowas**  
[sts-treasurer@aiiche.org](mailto:sts-treasurer@aiiche.org)

