

# CONTENTS

## Cover Focus

20



Global Industrial leaders identify Cloud, AI and digital technologies as important solution to surviving and thriving in today's new normal



Craig Hayman CEO AVEVA | Alan E. Nelson CTO ADNOC | Darren Martin CTO Wood | Bill Johnson Group VP & CTO, DCP Midstream | Craig Resnick VP, ARC Advisory Group

### Six Enablers of Digital Resiliency and long-term Sustainability



AVEVA & OSIsoft combine accelerating digital transformation of industrial world

28 APM 4.0 bridges the technology and generation divide



The next generation of industrial workers expect an easy, modern, scalable solution to conduct their work processes – high-speed internet access, mobile devices, touch screens and virtual reality. This combination of an evolving workforce and proliferation of technologies such as predictive maintenance, cloud, big data and mobility is bringing asset performance management 4.0 (APM) to the forefront of business

31 AVEVA accelerates digital transformation agendas

32 Fixing sand control failures



In mature basins, sand issues can account for up to 10% of all shut-in wells

'Industry-first' solution to combat sand control failure in wells

## Technology/Technical Papers

- 34 Major hybrid cloud collaboration for the energy industry
- 36 New cloud service assures data integrity for geotechnical info management
- 38 IoT condition monitoring in the process industry
- 41 Energy and exergy assessments of Organic Rankine Cycle
- 51 Discovering savings for the hydrocarbon sector
- 55 Carbon Nanotubes A novel approach to oil spill cleanup
- 61 Tectonic aspect of climate change

## Environment

- 8 STEP Energy to support a reliable supply of clean energy
- 73 Carbon dioxide and Hydrogen as raw materials for sustainable chemicals
- 75 B20 & IEA to G20: Accelerate clean energy transitions for a resilient economic recovery

"Mobilising the critical investments for meeting international energy and climate goals requires a grand coalition spanning governments, companies, investors and citizens. The IEA is pleased to work with the G20 and B20 to accelerate the major deployment of clean energy technologies that we need to build more sustainable and resilient energy systems. Despite the challenges we face from the Covid-19 crisis, stronger clean energy actions and ambitions from a growing number of governments and companies around the world make me increasingly optimistic for the future," says Dr Fatih Birol, Executive Director, IEA



78 Novel CO2 Research Group by Pandit Deendayal Petroleum University (PDPU)