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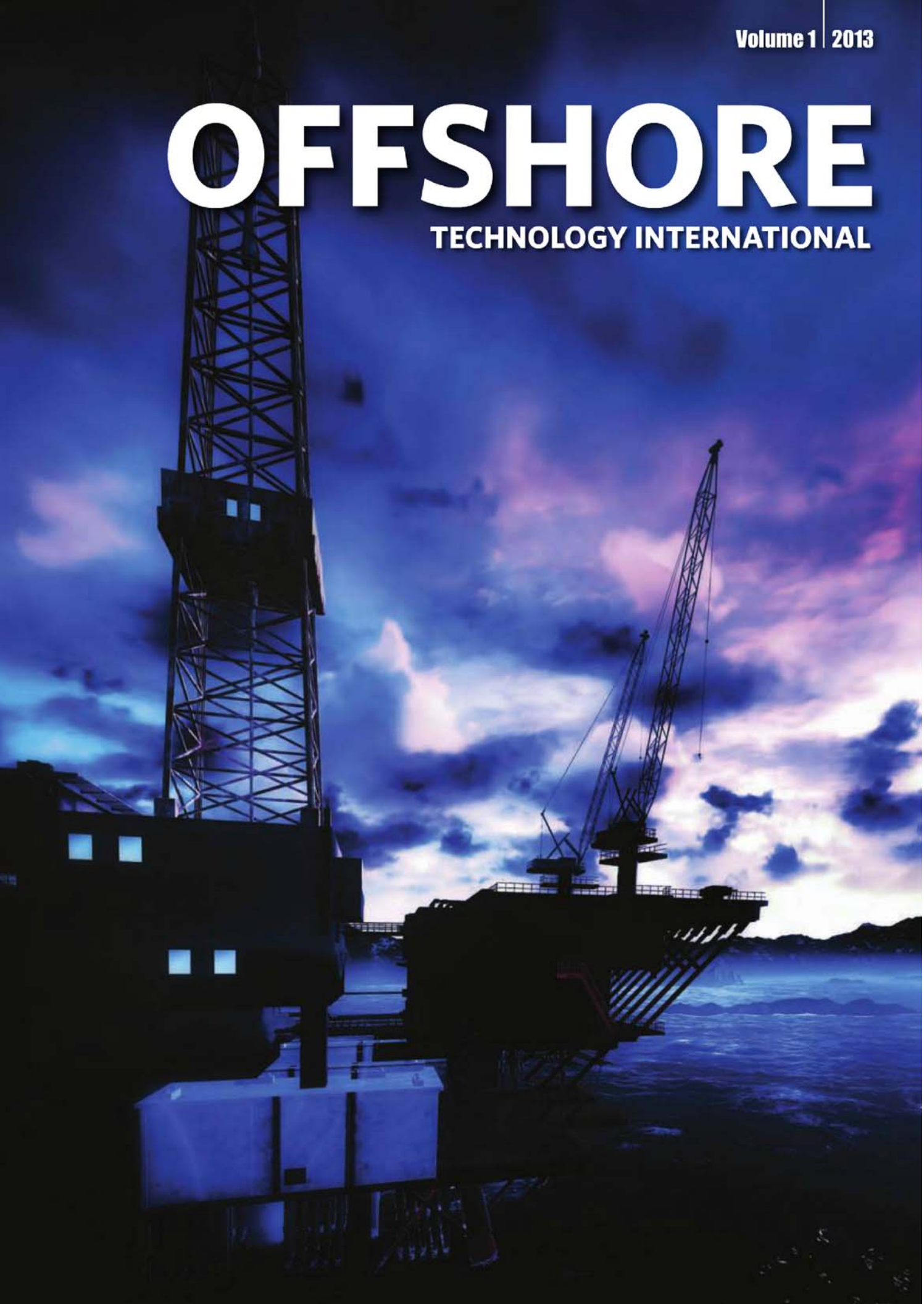
OFFSHORE

TECHNOLOGY INTERNATIONAL



Construction, Repair & Maintenance

Offshore Pipeline Integrity Services & Solutions

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MesoCoat builds world's first seamless, Metallurgical-Clad pipe production facility

ABAKAN INC.'S (OTC: ABKI) operating subsidiary Mesocoat Inc. has built the world's first seamless, metallurgically-bonded clad pipe manufacturing facility at MesoCoat's Euclid, Ohio R&D and Manufacturing complex. This facility brings to market a new option for seamless clad pipe, utilizing the company's CermaClad™ high-speed, large-area fusion-cladding technology that utilizes a high-intensity arc lamp (up to 1MW in power) to metallurgically clad corrosion – and wear-resistant alloys to the internal surfaces of pipes, that are primarily used for production and transportation of Oil and Gas.

This new facility will result in the commercial availability of seamless 316L, Alloy 625, and Alloy 825 clad pipes, with a true metallurgical bond in pipe diameters from 8" to 36" and above. The company intends to expand production capabilities to eventually be able to supply several hundred kilometers of seamless, metallurgically clad pipes annually in diameters ranging from 8" to 42" to support growing industry needs for corrosion and wear resistance. MesoCoat is initially focusing on upstream oil and gas production, but has a product pipeline for exploration, downstream petrochemicals, energy production, transportation, and infrastructure applications requiring corrosion and wear protection.

The unique features of the company's patented technology is that it is able to apply corrosion and wear resistant metal coatings and claddings as powders to a pipe, plate, or component surface, followed by rapid fusion (melting and bonding) to develop a fully dense, smooth, metallurgically bonded overlay using a proprietary high energy density, megawatt-class light source developed in partnership with Oak Ridge National Laboratories and Mattson

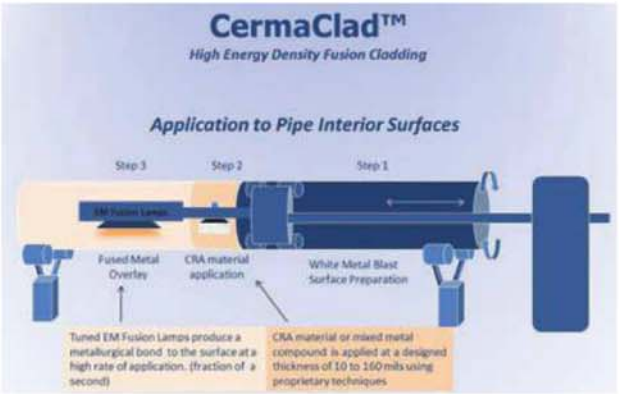

Figure 1: CermaClad clad pipe production process for metallurgically cladding the inside and/or outside diameter of pipes with corrosion – and wear – resistant alloys in thicknesses ranging from 100 microns to 15+ millimeters.

Figure 2: CermaClad arc lamp's 40 times wider application area compared to weld overlay coupled with rapid fusion, low heat affected zone, minimal dilution and porosity enables MesoCoat to produce clad pipes at rates up to 100 times faster than weld overlay.

Technology Inc. This enables MesoCoat to offer smooth, true seamless claddings in wear and corrosion resistant alloys at high production rates of up to 100X faster than traditional weld overlay processes, and without the welds of clad plate to pipe manufacturing methods employed today. The CermaClad™ clad pipe manufacturing technology and clad product was recently ranked as the #1 Manufacturing Innovation across the Globe by the Wall Street Journal, and has also received a prestigious R&D100 award as one of the world's top new materials technologies.

Mesocoat expects to begin 12-meter clad pipe production at their Euclid facility in Q2, 2013, with an initial production capacity of 20 kilometers of 16" seamless, metallurgically-clad pipe. Over the next several years, the company intends to leverage the low capital costs and high productivity of the CermaClad™ cladding technology to expand pipe and plate cladding production capabilities to produce wear and corrosion resistant clad steel products in various regions around the globe, including Asia-Pacific, Brazil, Canada, and Middle East along with further expansion of its US production capabilities. All these planned facilities would have 4-lines of manufacturing and each of these facilities would have the capability to produce 85 kms of 16" clad pipe or equivalent. Abakan intends to capture 30% of the global clad pipe market share with these 5 facilities by 2015, with approximately 400 kilometer of seamless clad pipe manufacturing capability. It is important to note that no other facility worldwide can produce large diameter, heavy-wall, seamless, metallurgically-bonded clad pipe.

Compared to competing mechanical-lined (bi-metal) pipe and roll-clad and welded pipe; the CermaClad™ clad pipe provides a true metallurgical bond tested to over 70,000 psi tensile and 31,000 psi shear strength in a seamless (weld-free) 12 meter pipe product. Unlike weld overlay, the high productivity of the CermaClad™ fusion cladding technology is truly scalable (40-100X faster than weld overlay), with minimal dilution and porosity, enabling improved corrosion resistance and thinner coatings to meet application requirements. Independent testing conducted

to industry standards under a cooperative agreement with MesoCoat's technology development partner, Petrobras S.A (NYSE: PBR), has confirmed that CermaClad™ product complies with current industry standards, including API 5LD and DNV-OS-F101.

Developmental CermaClad™ products include CermaClad™-HT, high temperature cladding for energy production and heat exchangers, including titanium claddings; CermaClad™-LT low thickness cladding take advantage of the low dilution of the process to apply a 3-10 mil corrosion-resistant cladding to protect from atmospheric and marine corrosion; while CermaClad™-WR wear resistant products include metal matrix composite, amorphous metal, and nanocrystalline carbide overlays to extend component and pipe life in critical high wear applications.

MesoCoat currently operates two major business units, the CermaClad™ division focusing on clad steel products, and a second component coating and repair division offering industry performance leading PComP™ thermal spray coatings to increase the life and reduce frictional losses and energy use in downhole, compression, pumping, and flow control components MesoCoat's affiliate company Powdermet Inc. offers high temperature solutions for the energy industry, including high temperature insulation and thermal barrier coatings from 200°C to 2500°C, and supplies engineered materials for fracking and well completion operations. MesoCoat is now commercializing several of its corrosion – and wear-resistant products; and has also verified performance, productivity, and cost benefits with industry leaders. ■

Figure 3: CermaClad high intensity arc lamp cladding the inside diameter of pipe with 3 mm thick Alloy 625

Contact information

MESO COAT

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