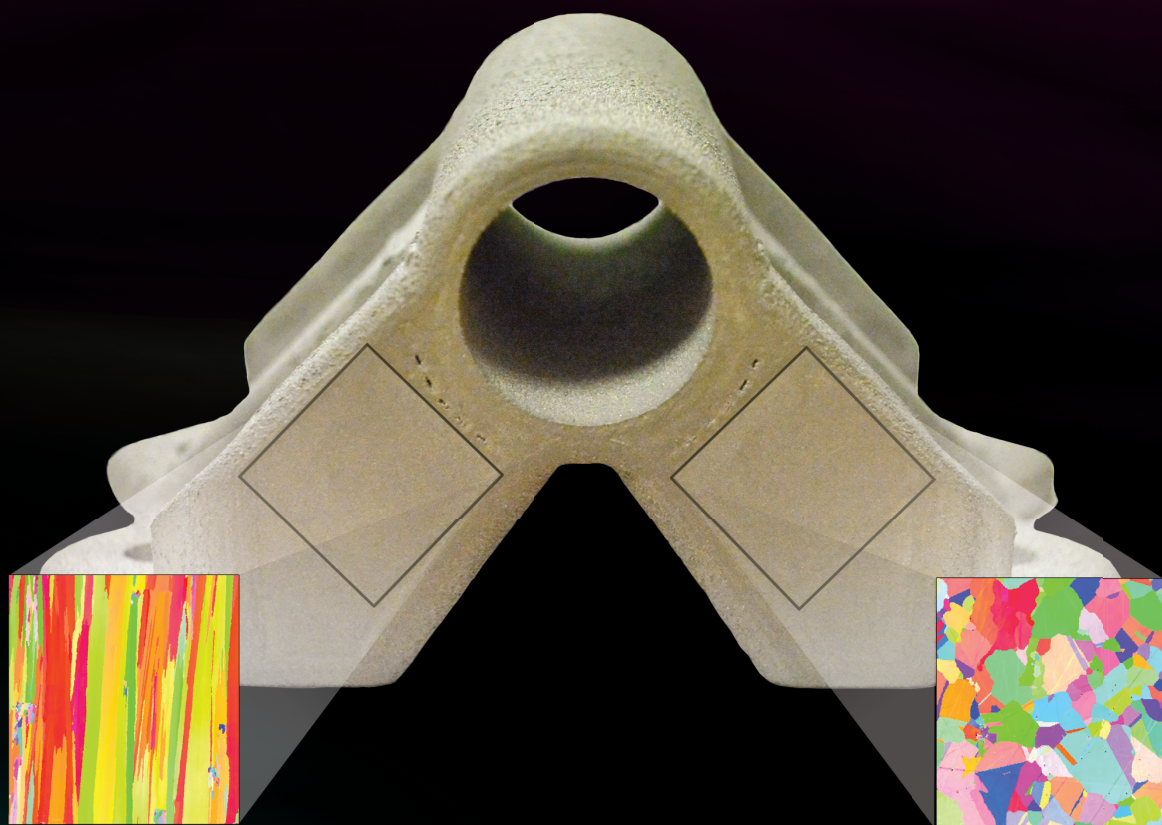


MRS Bulletin

October 2016 Vol. 41 No. 10
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Metallic materials for 3D printing



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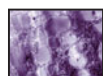


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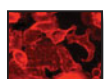


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ON THE COVER

Metallic materials for 3D printing. Three-dimensional (3D) printing of metallic materials involves the consolidation of feedstock materials in the form of powder, wire, or sheet using various energy sources to form complex shapes. The past two decades have seen significant advances in the field in terms of both materials and technologies for metal 3D printing. The cover shows an additively manufactured nickel-based superalloy component, which was 3D-printed at Oak Ridge National Laboratory, demonstrating the ability to print on-demand metallic microstructures to target tailored properties. The component is a bracket meant for aerospace use. The two insets are electron backscatter images depicting the difference in texture between the two regions. The one on the left is a columnar grained material, and the one on the right is an equiaxed microstructure. See the technical theme that begins on page 729.

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The Society's interdisciplinary approach differs from that of single-discipline professional societies because it promotes information exchange across many scientific and technical fields touching materials development. MRS conducts three major international annual meetings and also sponsors numerous single-topic scientific meetings. The Society recognizes professional and technical excellence and fosters technical interaction through University Chapters. In the international arena, MRS implements bilateral projects with partner organizations to benefit the worldwide materials community. The Materials Research Society Foundation helps the Society advance its mission by supporting various projects and initiatives.

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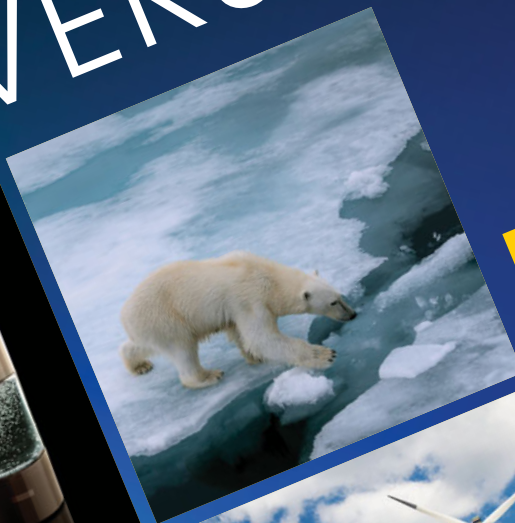
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