**（一）项目名称：**高强度高塑韧性钛合金多尺度微结构调控机制及强韧化机理

**（二）提名者：**内蒙古工业大学

**（三）提名意见：**该项目紧紧围绕钛合金实现高强度与高塑韧性匹配的关键核心问题，提出了多尺度微结构强塑韧化钛合金的新思路。阐明了多尺度微结构强塑韧化钛合金的适用性工艺影响规律；揭示了高强度高塑韧性钛合金室温协调变形机理；发明了双相变形组织退火再结晶竞争晶粒细化机制；建立了多尺度微结构强塑韧化钛合金的理论与方法。提供的五篇代表性论文均发表在国内外高水平学术刊物上，他引次数高，受到国内外同行专家的广泛关注和认可，很多国内外知名科研团队基于本项目成果开展了相关研究，并取得重大进展。

提名该项目为内蒙古自治区自然科学奖二等奖。

**（四）候选人及排序：**1.杜赵新；2.巩天浩；3. 陈瑞润；4. 刘景顺；5. 康煦东；6. 陈玉勇

**（五）候选单位及排序：**1.内蒙古工业大学；2.哈尔滨工业大学

**（六）主要支撑材料清单：**

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| --- | --- | --- | --- |
| **论文（专著）** | | | |
| 序号 | 论文（专著）名称 | 刊名/出版社 | 年，卷，期，页码/出版时间 |
| 1 | Rolling reduction-dependent deformation mechanisms and tensile properties in a β titanium alloy | Journal of Materials Science & Technology | Volume 104, 30 March 2022, Pages 183-193 |
| 2 | Effect of cold rolling process on microstructure and mechanical properties of high strength β titanium alloy thin sheets | Progress in Natural Science: Materials International | Volume 28, December 2018, Pages 711-717 |
| 3 | Microstructure evolution during aging heat treatment and its effects on tensile properties and dynamic Young's modulus of a biomedical β titanium alloy | Materials Science and Engineering: A | Volume 791  July 2020,  139677 |
| 4 | Improving mechanical properties of near beta titanium alloy by high-low duplex aging | Materials Science and Engineering: A | Volume 754 April 2019, Pages 702-707 |
| 5 | Controlling the microstructure and fracture toughness of the Ti–5Al–5Mo–5V–1Cr–1Fe alloy by multiple heat treatments | Journal of Materials Research and Technology | Volume 17, March–April 2022, Pages 2528-2539 |