

IPSSC +
CMBO

STUDENTS' CONFERENCE

Jožef Stefan International Postgraduate School
and Young Researchers' Day CMBO

19 and 20 April

Making zirconia ceramics machinable

Ana Lazar,
Jožef Stefan Institute
Poster number: 53

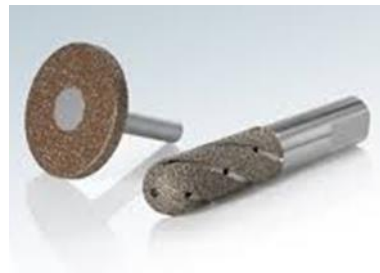
Introduction

ZrO₂ -zirconia

- good mechanical properties
 - biocompatibility
- ↓
- Wide range of applications (sensor for exhausted gases, valves, dental and orthopaedic prostheses)

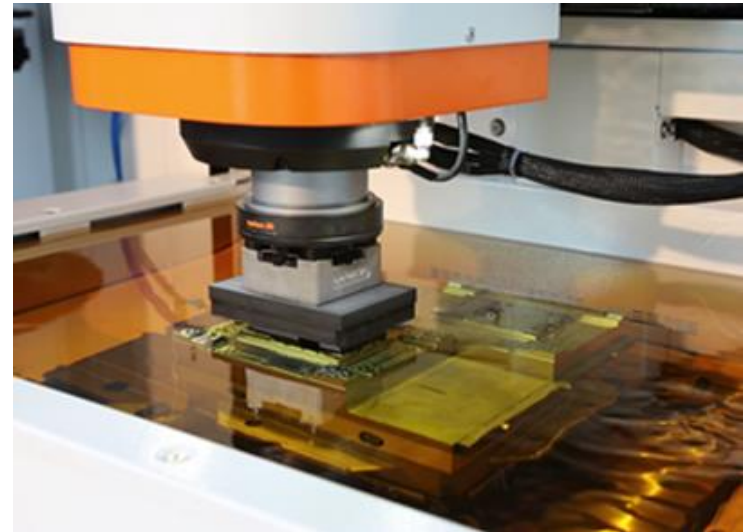


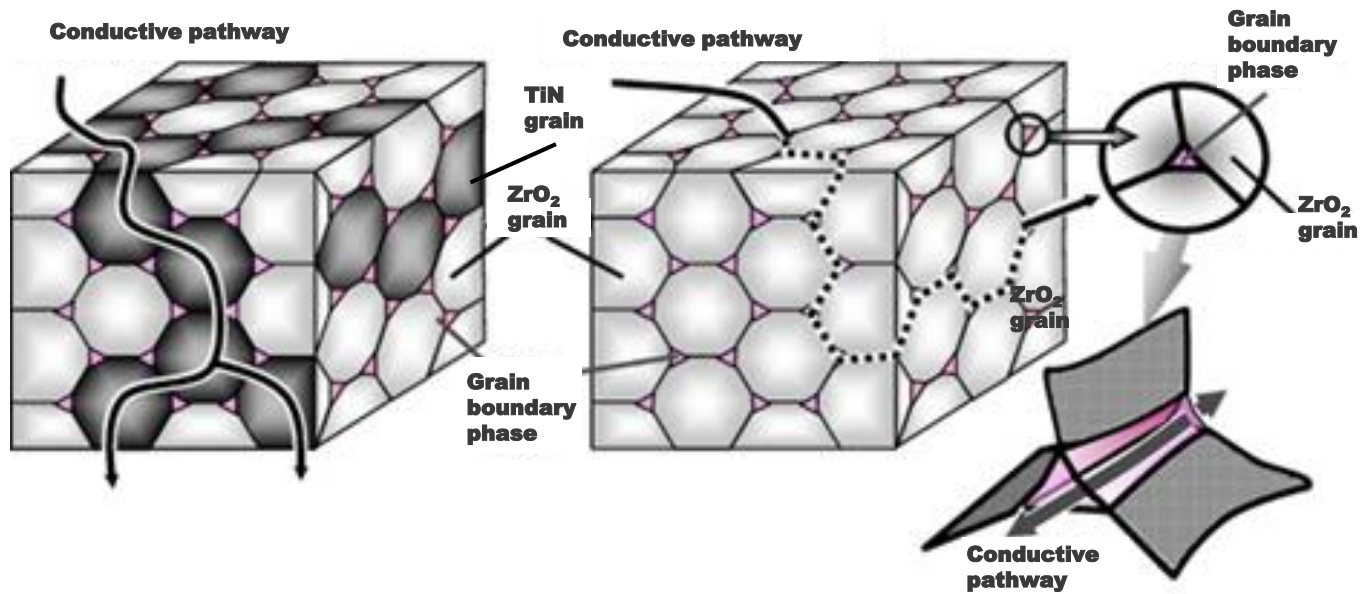
Conventional machining



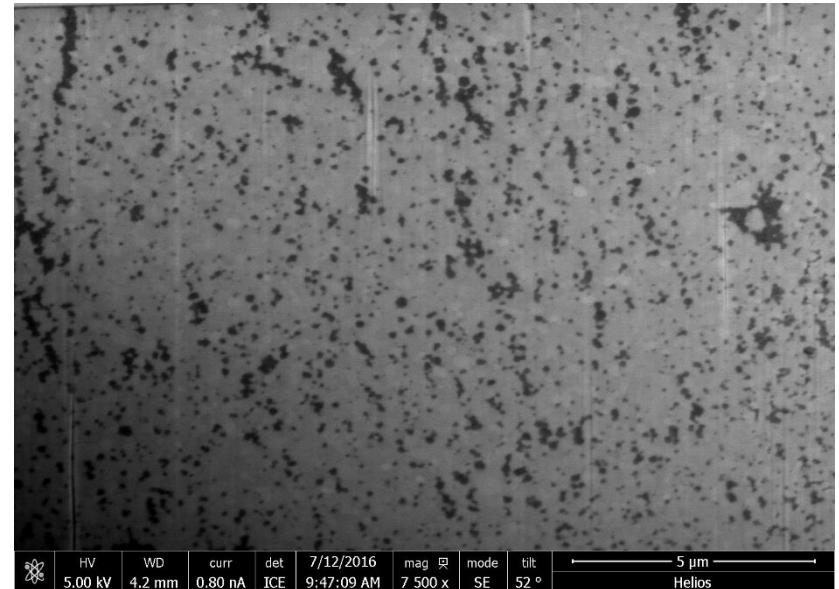
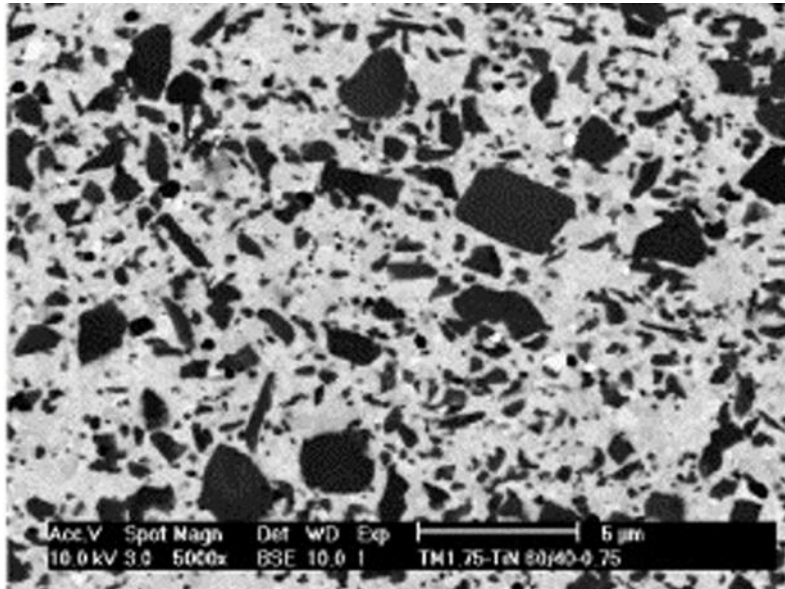
Diamond tools

Electrical discharge machining (EDM)

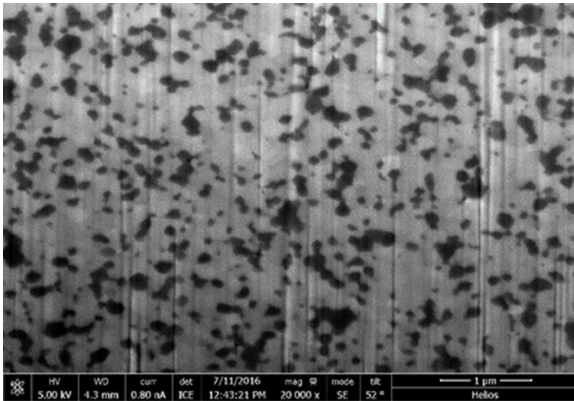




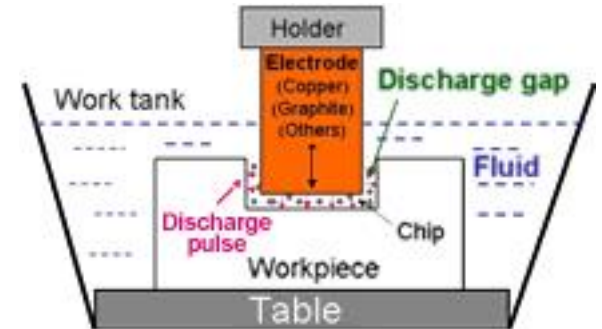
*Kusunose, T., Sekino, T., Niihara, K. Production of grain boundary phase as conductive pathway in insulating AlN ceramics, Acta Materialia, Vol. 55, Iss. 18, 6170-6175, 2007.



*Salehi, S., Van der Biest, O., Vleugels, J. Electrically conductive ZrO₂-TiN composites, Journal of the European Ceramic Society, Vol 26, 3173-3179, 2006.



<http://www.cinn.es/industry-and-commercialisation/spark-plasma-sintering/>



Mechanism of die-sinker EDM

<http://www.sodick.co.in/technology.php>

