

# **GaN Wafer Procurement Update**

# GaN Wafer Specs

- Investigating the procurement of 3-5 2" or 4" GaN wafers on either native (GaN) substrates or on SiC substrates
  - Epi-grown layer thickness 10 $\mu$ m
  - Substrate: amonno-thermal for native GaN substrates
  - Epi carrier concentration:  $<5 \times 10^{15} \text{ cm}^{-3}$  , i.e. no-intentional doping
  - Front side surface: as grown
  - Back side surface: optical polish

# GaN Wafer Purchase/Vendors

- Received quote from Kyma Tech (see [here](#))
  - \$9k for 2” wafers and up to \$20k for 4” wafers
  - Significantly lower if we provide the substrates, <\$2.5k irrespective of wafer size
- Before the holidays started discussions with GaN substrate provider
  - Unipress – offshoot of Institute of High Pressure Physics Polish Academy of Sciences
  - 1<sup>st</sup> meeting on 2024/12/13, 2<sup>nd</sup> meeting on 2025/01/17
  - Provided initial specifications (similar to Kyma, see previous slide)
  - Discussed the possibility of achieving p-doping – fabricate GaN p-n junction
  - Also discussed the possibility of AlGaN layer (heterostructures)
  - Potential for a collaborative effort to develop 2”- 4” substrates
- NRC/Carleton starting the process to purchase 2-3 3” GaN wafers on SiC
  - Developing mask for above size – process to the HEMT stage
  - DC and RF characterization at NRC